```
RESULT
                                                                                        September 10, 2001, 14:01:21; Search time 72.54 Seconds (without alignments) 32.830 Million cell updates/sec
                                                                                                                                                                                                                                                                                                  425026
GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                             Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                          Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                          OM protein - protein search, using sw model
                                                                                                                                                    US-08-833-506C-25
103
1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                    BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                       SPTREMBL_16:*

1: sp_archea:*
2: sp_bacteria:*
3: sp_fungi:*
4: sp_human:*
5: sp_invertebrate:*
6: sp_amammal:*
7: sp_anc:*
8: sp_organile:*
                                                                                                                                                                                                                                                                                                                              Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_phage:*
sp_plant:*
sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10:
11:
12:
14:
                                                                                                                                                      Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                          Database :
                                                                                                                                                                                                                                                                   Searched:
                                                                                           Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

sp_unclassified:*
sp_vertebrate:*
sp_virus:*

SUMMARIES

Description	094994 homo sapien	Q9r0w4 rattus norv	Q9qw28 rattus sp.	Q9ttt6 oryctolagus	Q9n175 ovis aries	097604 canis famil	Q9n176 ovis aries	Q9wtk6 cavia porce	Q9pu92 cyprinus ca	Q9jjy7 rattus norv	Q9tux8 canis famil	077104 manduca sex	Q9vkp8 drosophila	Q42697 chlamydomon	Q9s9e0 chlamydomon	Q41641 volvox cart	Q9n127 ovis aries	Q9kay1 bacillus ha	032214 bacillus su
ID	094994	Q9R0W4	Q9QW28	Q9TTT6	Q9N175	097604	971N6Q	Q9WTK6	Q9PU92	Q9JJY7	Q9TUX8	077104	Q9VKP8	042697	036S6O	041641	Q9N127	Q9KAY1	032214
DB	4	11	11	9	9	9	9	11	13	11	9	2	Ŋ	10	10	10	9	7	7
Query Match Length DB	1114	1147	1147	82	945	1154	366	1206	1127	306	1205	1206	1349	255	320	346	146	267	605
Query Match	96.1	96.1	96.1	87.4	86.4	86.4	73.8	72.8	71.8	70.9	68.8	54.4	54.4	49.5	49.5	49.5	47.6	47.6	46.6
Score	66	66	66	90	89	89	97	75	74	73	7.1	26	26	51	51	51	49	49	48
Result No.	1	7	m	4	S	9	7	8	6	10	11	12	13	14	15	16	17	18	19

09kf76 bacillus ha 09kux4 vibrio chol 048425 eschscholzi 024425 eschscholzi 096560 helianthus 09u28 schizosacch 096561 helianthus 09judB neisseria m 09jx45 neisseria m 09jx45 neisseria m 09fx7 triticum ae 043235 vicia sativ 004x34 pisum sativ 09sum3 arabidopsis 09sum40 arabidopsis 09sum40 arabidopsis	Q39035 arabidopsis Q9sb48 arabidopsis Q9i334 pseudomonas Q18648 caenorhabdi Q9pd80 xylella fas
2 Q9KF76 2 Q9KUX4 10 048938 10 024425 10 096560 10 096561 2 Q9US28 2 Q9US45 10 09FWA7 10 043235 10 043434 10 09SWM3 10 039036 5 Q9VSJ5 2 Q9ID79 10 09SW40 10 09SW40 10 09SW40	10 039035 10 095848 2 091334 5 018648 2 09PD80
000 001 001 001 001 001 001 001 001 001	692 692 217 326 612
44444444444444444444444444444444444444	422.7 422.7 411.7 411.7
\$	1 4 4 4 4 4 1 4 4 6 6 6 6
0 1 0 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	44444 64444 6444

ALIGNMENTS

	PRELIMINARY; PRT; 1114 AA.		(-1999 (TrEMBLrel. 10, Created)	(TrEMBLrel.	(TrEMBLrel.	TRIC OXIDE SYNTH		Homo sapiens (Human).	Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostom1;	lia; Eutheria; Primates; Catarrhini; Hominidae; Homo.			ICE FROM N.A.	Ogawa Y., Nishijima S., Goto M., Ida M.;	"Cloning and characterization of a novel splice valiant of human	inducible nitric oxide synthase.";	Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.	EMBL; AB022318; BAA37123.1;		InterPro; IPR001094;			pro; IPR003097;	PF00175;	PF00667; FAD_binding; 1.	PRINTS; PR00369; FLAVODOXIN.		NCE 1114 AA; 126748 MW; C1F9624774435571 CRC64;	96.1%; Score 99;	94.4%; Pred. No. 2.7e-08;	1/; Conservative U; Mismatches I; indeis U; Gaps	1 GIVPFRSFWQQRLHDSQH 18		
4	94994	094994;		01-MAY-1999 (T)	_	INDUCIBLE NITR	INOS.	Homo sapiens (Eukaryota; Meta	Mammalia; Eutheria;	NCBI_TaxID=9606;	[1]	SEQUENCE FROM N.A.	Ogawa Y., Nish	"Cloning and cl	inducible nitra	Submitted (JAN	EMBL; AB022318,	HSSP; P35228; 4NOS.	InterPro; IPR0	InterPro; IPR0(InterPro; IPRO(InterPro; IPRO(Pfam; PF00175;	Pfam; PF00667;	PRINTS; PR0036	PRINTS; PR0037.	SEQUENCE 1114	Query Match	cal Simi		1 GIVPFRSFW	=======================================	
094994	OI.	AC		DI	DI	DE	NS.	SO			×o	RN	RP				RL			DR	DR	DR	DR					ös	One	Bes	Mat	ΟŊ		

ö

RESULT

```
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9TTT6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
     SORRER SERVICE SERVICE SORRER SERVICE SORRER SERVICE SORRER SERVICE SERVICE SORRER SERVICE SER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                              Rattus norvegicus (Rat).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN-WISTAR KYOTO;
MEDINE-99326503; PubMed=10395902;
Reinanen R.A., Vartiainen N., Koistinaho J.;
Reinanen R.A., Vartiainen N., Koistinaho J.;
Molecular cloning and characterization of the rat inducible nitric cande synthase (1NOS) gene.";
Gene 234:297-305(1999).
EMBL; AJ230463; CAB46089:1; JOINED.
EMBL; AJ230464; CAB46089:1; JOINED.
EMBL; AJ230464; CAB46089:1; JOINED.
EMBL; AJ230464; CAB46089:1; JOINED.
EMBL; AJ230465; CAB46089:1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 99; DB 11; Length 11
Pred. No. 2.7e-08;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         E76B3F8407D54CF6 CRC64
                                               (TrEMBLrel. 13, Created)
(TrEMBLrel. 13, Last sequence update)
                  PRT; 1147 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT; 1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOINED.
JOINED.
JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOINED.
                                                                                                                                                                                                                                                                                                                                                                                              CAB46089.1; JOINED. CAB46089.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                             CAB46089.1; JOINED.
CAB46089.1; JOINED.
CAB46089.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAB46089.1; JOINED. CAB46089.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAB46089.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CAB46089.1; JOINED.
CAB46089.1; JOINED.
CAB46089.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAB46089.1; JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAB46089.1; JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1147 AA; 130613 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro; IPR003097; -. Pfam; PF00175; oxidored_fad; 1. Pfam; PF00667; FAD_binding; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PR00369; FLAVODOXIN.
PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          96.1%;
94.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAB46089.1;
CAB46089.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAB46089.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAB46089.1;
CAB46089.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CAB46089.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CAB46089.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAB46089.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CAB46089.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 96.1
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001709
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001094
InterPro; IPR001433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             P29477; 1NOS
                                                                                                                                                                                   NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                               AJ230467;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AJ230480;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AJ230481;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AJ230484;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             AJ230470;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AJ230473;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AJ230487;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AJ230486
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Q9QW28
Q9QW28;
01-MAY-2000 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                  Q9R0W4
                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       090W28
ID 009
AC 009
DT 001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
```

```
Rattus sp. Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Eukaryota; Metazoa; Chordata; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10118;
                                                                                                                                                          [1]
SEQUENCE FROM N.A.
MEDILINE-93221515; PubMed-7682072;
Wood E.R., Berger H.Jr., Sherman P.A., Lapetina E.G.;
"Hepatocytes and macrophages express an identical cytokine inducible
nitric oxide synthase gene.";
Blochem. Blochbys. Res. Commun. 191:767-774(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Oryctolagus cuniculus (Rabbit).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Lagomorpha, Leporidae, Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Shi Y., Pritchard K.A., Baker J.E.; "Chronic myocardial hypoxia increases nitric oxide synthase and decreases caveolin-3.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 99; DB 11; Length 1147;
Pred. No. 2.7e-08;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 82;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1147 AA; 130625 MW; 2CAFB983E56F651A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [1] SEQUENCE FROM N.A. SEQUENCE FROM N.A. STRAIN-NEW ZEALAND WHITE; TISSUE-KIDNEY; TRAO L.S., O'Brien W.J.; Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      73244479A4B965F6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-2000 (TrEMBLrel. 13, Created)
1-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAX-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE NOS2 (FRAGMENT).
01-MAR-2001 (TrEMBLrel. 16, Last annotation update) CYTOKINE INDUCIBLE NITRIC OXIDE SYNTHASE, INOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          [2]
SEQUENCE FROM N.A.
STRAIN-NEW ZEALAND WHITE; TISSUE-HEART MYOCARDIUM,
PubMed-11053770;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 90; DB 6;
Pred. No. 5.9e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 82 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Free Radic. Biol. Med. 29:695-703(2000).
EMBL; AF198443; AAF09500.1; -.
EMBL; AF200351; AAC24286.1; -.
INTESP: PO03088; IAMO.
INTERPPO; IPRO01709; -.
PRINTS; PRO0371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                        HASEF, 128-17, 120.

INTERPRO; IPRO01094; -

INTERPRO; IPRO01433; -,

INTERPRO; IPRO01709; -,

INTERPRO; IPRO03369; -,

INTERPRO; IPRO03097; -,

Pfam; PFO0175; oxidored_fad; 1,

PFAMTS; PRO0369; FLAVDDOXIN.

PRINTS; PRO0369; FLAVDDOXIN.

PRODOM; PD001811; -; 1,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96.1%;
94.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  87.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      82 AA; 9396 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
```

ö

ᠬ

```
InterPro; IPR001709; -.
InterPro; IPR003097; -.
Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
SEQUENCE 1154 AA; 131709 MW;
                                                                                                      86.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          73.8%;
80.0%;
                                                                                                                                                                982 GIAPFRSFWQQRLHDIKH 999
                                                                                                                                                   1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                             15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 73.8
Best Local Similarity 80.0
Matches 12; Conservative
                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1| |||:|||:||||
264 GIAPFRAFWQERLHD 278
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GIVPFRSFWQQRLHD 15
                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NON_TER
SEQUENCE
                                                                                                                                                                                                                                            Q9N176;
                                                                                                                                                                                                                                09N176
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9WTK6
                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
    q
                                                                                                                                                                                                                                  ID DT DT DT OC OC OC OC OC
                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
   ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-AORTA;
MEDLINE-98141941; PubMed-9746458;
MEDLINE-98141941; PubMed-9746458;
MEDLINE-98141941; PubMed-9746458;
Wang X., McGregor C.G.A., Miller V.M.;
"Induction and cDNA sequence of inducible nitric oxide synthase from canine aortic smooth muscle cells.";
Am. J. Physiol. 275:H1129-H1129(1998).
EMBL; AF077821; AAC78630.1; -.
HSSP; P29477; INOS.
InterPro; IPR001094; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
     Gaps
                                                                                                                                                                 Ovis aries (Sheep).

Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Bammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
MCBI_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE.
Canis familiaris (Dog).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                        SEQUENCE FROM N.A. Mershon J.L., Clark K.E.; "Estrogen increases the expression of iNOS in the ovine coronary
   ó:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 89; DB 6; Length 945;
Pred. No. 1.1e-06;
3; Mismatches 1; Indels
    Indels
                                                                                                                                                                                                                                                                                    Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AF223942; AAF34710.1; -.
InterPro; IPR001094; -.
InterPro; IPR001094; -.
InterPro; IPR001709; -.
InterPro; IPR003097; -.
Pfam; PF00175; Oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                           108001 MW; 9A5ACFD40440A74F CRC64;
                                                                                                                         01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
   ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT; 1154 AA.
                                                                                                      945 AA
                                                                                                                                                            INDUCIBLE NITRIC OXIDE SYNTHASE (FRAGMENT).
    Mismatches
                                                                                                      PRT;
  2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 86.4%;
Best Local Similarity 77.8%;
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     809 GIAPFRSFWQQRLHEAEH 826
                                     31 GIAPFRSFWQQRLHDSEY 48
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GIVPFRSFWQQRLHDSQH 18
                         1 GIVPFRSFWQQRLHDSQH 18
  15; Conservative
                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                 945
                                                                                                                                                                                                                                                                                                                                                                                                                          945 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                NON_TER
SEQUENCE
                                                                                                   Q9N175
Q9N175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    097604
                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
   Matches
                                                                                RESULT
Q9N175
                                                                                                      g
                         à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ovis aries (Sheep).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi;
Mammalia, Eutheria, Cetartiodactyla, Ruminantia, Pecora, Bovoidea,
Bovidae, Caprinae, Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Cavia porcellus (Guinea pig).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostom1; Mammalia; Eutheria; Rodentia; Hystricognath1; Caviidae; Cavia. NCBL_TaxID=10141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     [1]
SEQUENCE FROM N.A.
Mershon J.L., Clark K.E.;
"Estrogen increases the expression of iNOS in the ovine coronary
                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                    Length 1154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 366;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1; Indels
                                                                                                                     Indels
1154 AA; 131709 MW; 42CD606E447254CB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          artery.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
BMBL, AF23471; AAF34707.1; ...
InterPro; IPR001433; ...
InterPro; IPR001403; ...
InterPro; IPR0015097; ...
Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00077; FAD_binding; 1.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              366 AA; 40791 MW; 794B274DA786A4AO CRC64;
                                                                                                                                                                                                                                                                                                                                                                            01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
ENDOTHELIAL NITRIC OXIDE SYNTHASE (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1999 (TrEMBLrel. 12, Created)
(1-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-NAR-2001 (TrEMBLrel. 16, Last annotation update)
ENDOTHELIAL NITRIC OXIDE SYNTHASE.
                                            Score 89; DB 6; Ler
Pred. No. 1.4e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 76; DB 6; Pred. No. 6.5e-05;
                                                                                                                                                                                                                                                                                                                                  366 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT; 1206 AA
                                                                                                                   1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                  PRT;
```

SEQUENCE FROM N.A.

```
TISSUE-HEART
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-LUNG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cloning.
                                                                                                                                                                         09JJY7 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9TUX8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 O9TUX8
                                                                                                                                   09JJY7
                                                                       RESULT 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 11
                                                                                                     093377
                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. Saeij J.P., Stet R.J., Groeneveld A., Verburg-van Kemenade L.B., Wiegertjes G.F.; "Identification and characterization of a fish inducible nitric oxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cyprinus carpio (Common carp).

Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Actinopterygii; Neopterygii; Teleostei; Euteleostei; Ostariophysi;
Cypriniformes; Cyprinidae; Cyprininae; Cyprinus.
NCBI_TaxID=7962;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72.8%; Score 75; DB 11; Length 1206; 80.0%; Pred. No. 0.00033; 1ve 1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1127;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2; Indels
                           1127 AA; 127431 MW; 8317FC67C7A3DD9A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EB4E792D3F9503DD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE (EC 1.14.13.39).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00175; Oxidored_fad; 1.
Pfam; PF0067; FAD_binding; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
PRODOM; PD002221; -: 1.
PROSTIE; PS00339; AA_TRNA_LIGASE_II_2; UNKNOWN_1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 74; DB 13;
Pred. No. 0.00045;
1; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT; 1127 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1206 AA; 133692 MW;
                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Immunogenetics 0:0-0(0).
EMBL; AJ242906; CAB60197.1; -
HSSP; P29477; 1NOS.
InterPro; IPR001094; -
InterPro; IPR001433; -
InterPro; IPR001522; -
InterPro; IPR001509; -
InterPro; IPR001509; -
InterPro; IPR00106; -
InterPro; IPR003097; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       71.8%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 72.8
Best Local Similarity 80.0
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1020 GIAPFRGFWQERLHD 1034
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GIVPFRSFWQQRLHD 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 GIVPFRSFWQQRLHD 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        synthase cDNA.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oxidoreductase.
SEQUENCE 1127
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09PU92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
Q9PU92
RATARITA SERVICE SERVI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HD DDT THE BELL THE POLICE OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
```

```
ö
                                                                                                                                             Rattus norvegicus (Rat).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NGBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota; Metazoà; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-99369487; PubMed-10442857; Schwemmer M., Bassenge E.; "Assembly and characterization of canine heart endothelial nitric oxide synthase cDNA and 5'-flanking sequence by homology (RT-)PCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              70.9%; Score 73; DB 11; Length 306; 80.0%; Pred. No. 0.00017; ive 0; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                        TISSUB-LUNG;
Bachmann S., Bostanjoglo M., Nafz B., Oberbaeumer I.;
No synthases in the kidney.";
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
EMBL, AJ249546; CAB77547.1;
InterPro; IPR001709;
InterPro; IPR001709;
InterPro; PR003097;
Pfam; PF00667; FAD_binding; 1.
                                                                                                                                                                                                                                                                                   Oberbaeumer I., Welp H., Bachmann S.;
"A cDNA probe for rat NOS3 for in situ hybridization.";
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    306 AA; 33803 MW; 6466628BF253EE13 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
                                      01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
ENDOTHELAL NITRIC OXIDE SYNTHASE 3 (FRAGMENT).
306 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT; 1205 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nitric Oxide 3:254-264(1999).
EMBL; AP143503; AAD52161.1; -
HSSP; P29474; 3NOS.
InterPro; IPR001094; -
InterPro; IPR001433; -
InterPro; IPR001409; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GIVPFRSFWQQRLHD 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Canis familiaris (Dog).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NITRIC OXIDE SYNTHASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9615;
```

S

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hosophila melanogaster (Fruit fly).

Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;

Pteryyota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;

Ephydroidea; Drosophilidae; Drosophila.

NCBI_TaxID-7227;
                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Manduca sexta (Tobacco hawkmoth) (Tobacco hornworm).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pteryyota; Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia;
Sphingiodea; Sphingidae; Sphinginae; Manduca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. MEDIAGE-9736646; MIDDED A. GIBSON N.J. RIVERS D.M., Hildebrand J.G., Morton D.B.; Wighborn A., Gibson N.J., Rivers D.M., Hildebrand J.G., Morton D.B.; "The nitric oxide-GGMP pathway may mediate communication between sensory afferents and projection neurons in the antennal lobe of
                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 56; DB 5; Length 1206; Pred. No. 0.54;
                                                                                                                                                        Length 1205;
                                                                                                                                                                                              3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7; Indels
                                                                                                1205 AA; 133045 MW; C150CDEB01685BA5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1206 AA; 137032 MW; BF5528FC99ADECE6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAY-2001 (TrEMBLrel. 16, Last annotation update)
NITRIC-OXIDE SYNTHASE (EC 1.14.13.39) (DNOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                Last sequence update)
Last annotation update)
                                                                                                                                                        Score 71; DB 6;
Pred. No. 0.0016;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT; 1349 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                              Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    J. Neurosci. 18:7244-7255(1998).
EMBL; AF062749; AAC61262.1; -.
HSSP; P29477; 1DD7.
InterPro; IPR003097; ... Pfam; PF00175; oxidored_fad; 1. Pfam; PF00667; PAD_binding; 1. PRIWTS; PR00369; FLAVODOXIN. PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ë,
                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        54.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1033 GVAPFRGFWHHRRHQMKN 1050
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PR00369; FLAVODOXIN.
                                                                                                                                                          68.9%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                        077104;
01-NOV-1998 (TrEMBLrel. 08,
01-NOV-1998 (TrEMBLrel. 08,
01-OCT-2000 (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                          1019 GIAPFRGFWQGRLHD 1033
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match
Best Local Similarity 44.47
Best Local 8; Conservative
                                                                                                                                                        Query Match 68.9
Best Local Similarity 80.0
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                    1 GIVPFRSFWQQRLHD 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001094; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR001433; -. InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Manduca sexta."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9VKP8; Q9U096;
                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRINTS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9VKP8
                                                                                                                                                                                                                                                                                                                                                                    077104
                                                                                                                                                                                                                                                                                                                                    RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 13
                                                                                                                                                                                                                                                                                                                                                  0077104
11D D77104
00 D77109
00 D77109
00 D77104
00 D771
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ð
```

320 AA

PRT;

PRELIMINARY;

```
Search completed: September 10, 2001, 14:11:11
Job time: 590 sec
                            0989E0;
01-MAY-2000 (
01-MAY-2000 (
                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                 SEQUENCE
                     ò
                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                           ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Primary structure and post-translational modification of ferredoxin-
NADP reductase from Chlamydomonas reinhardtii.";
Arch. Blochem. Blophys. 316:249-259(1995).
                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                            Chlamydomonas reinhardtii.
Eukaryota; Viridiplantae; Chlorophyta; Chlorophyceae; Volvocales;
Chlamydomonadaceae; Chlamydomonas.
                                                                                                                                                                                                           0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Decottignies P., Le Marechal P., Jacquot J.P., Schmitter J.M.,
Gadal P.,
R InterPro; IPR001709; -.
R InterPro; IPR001933; -.
R InterPro; IPR001933; -.
R InterPro; IPR003097; -.
R InterPro; IPR003097; -.
R PEAM; PF00175; Axidored_fad; 1.
R PEAM; PR00371; FPNCR.
R PRINTS; PR00371; FPNCR.
R PROSITE; PS00215; MITOCH_CARRIER; UNKNOWN_1.
R Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme; Alternative splicing.
R OXIGORELICT 373 373 T -> S (IN REF. 2).
R CONFLICT 1197 1197 S -> R (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                       01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
FERREDOXIN NADP REDUCTASE (EC 1.18.1.2) (FERREDOXIN--NADP(+)
                                                                                                                                                                                  54.4%; Score 56; DB 5; Length 1349;
81.8%; Pred. No. 0.6;
                                                                                                                        373 373 T -> S (IN REF. 2).
1197 1197 S -> R (IN REF. 2).
1349 AA; 151713 MW; E19DBCBAEFAF76FC CRC64;
                                                                                                                                                                                                           1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         628CFED2592A1999 CRC64;
                                                                                                                                                                                                                                                                                                                    255 AA
                                                                                                                                                                                                          1; Mismatches
                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=137C;
MEDLINE=95142635; PubMed=7840625;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001433; -.
InterPro; IPR001709; -.
Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FERREDOXIN + NADPH.
-1- COFACTOR: FAD.
EMBL, X78851, CAA55406.1; -.
HSSP, P00455; IFNC.
Mendel, 7667, Chire, PetH; 7667.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             255 255
255 AA; 28594 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 72.77
Post Local B; Conservative
                                                                                                                                                                                  Query Match
Best Local Similarity 81.8
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                               || |||||||:
|182 GIAPFRSFWQE 1192
                                                                                                                                                                                                                                1 GIVPFRSFWQQ 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oxidoreductase
                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                          RESULT 14
Q42697
                                                                                                                                                                                                                                                                                                                   042697
                                                                                                                                                                                                                                                      a
    à
```

ö

Gaps

ö

1; Indels

49.5%; Score 51; DB 10; 72.7%; Pred. No. 0.75; tive 2; Mismatches 1;

12

RESULT

1 GIVPFRSFWQQ 11

ð q

Length 255;

ö

```
"Primary structure and post-translational modification of ferredoxin-NADP reductase from Chlamydomonas reinhardtii.";
Arch. Biochem. Biophys. 316:249-259(1995).
HSSP; P00455; IFNC.
InterPro; IPR001433; -.
InterPro; IPR001709; -.
Pfam; PF00175; oxidored_fad; I.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                    Chlamydomonas reinhardtii.
Vakaryota, Virldiplantee; Chlorophyta; Chlorophyceae; Volvocales;
Chlamydomonadaceae; Chlamydomonas.
NCBI_TaxID=3055;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                      MEDLINE-95142635; PubMed-7840625;
Decottignies P., Le Marechal P., Jacquot J.P., Schmitter J.M.,
Gadal P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 51; DB 10; Length 320;
Pred. No. 0.95;
2; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               320 AA; 35571 MW; DB7897520C5B87E7 CRC64;
01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
FERREDOXIN-NADP REDUCTASE (EC 1.18.1.2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 72.7%;
Matches 8; Conservative 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PR00371; FPNCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           || || |||||:
180 GIAPFRSFWRR 190
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 GIVPFRSFWQQ 11
```

```
SETTTTTTT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       homo sapien
homo sapien
cavia porce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      bos taurus
mus musculu
rattus norv
homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          gallus gall
homo sapien
bos taurus
sus scrofa
rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     buchnera ap
escherichia
salmonella
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     schizosacch
thiocapsa r
                                                                                                                       ; Search time 23.82 Seconds
(without alignments)
25.886 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          mus musculu
rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            anopheles s
drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      chlamydomon
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           candida gla
catharanthu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 019114 oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         mus musculu
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lymnaea sta
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        rhodnius pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   schizosacch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      P29477

P29477

P26518

P26060591

P27065

P27065

P27065

P29476

P29477

P29
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q09744
Q10325
P52674
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                  93435 seqs, 34255486 residues
                                                                                                                            September 10, 2001, 14:00:31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOS2_CHICK
NOS3_HUMAN
NOS3_BOVIN
NOS3_PIG
NOS3_RAT
NOS3_MOUSE
NOS_LYMST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOS2_BOVIN
NOS1_MOUSE
NOS1_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NOST_RABIT
NOS_RHOPR
NOS_ANOST
NOS_DROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YB63_SCHPO
YD6D_SCHPO
CYSJ_THIRO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NS2A_HUMAN
NS2D_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CYSJ_BUCAI
CYSJ_ECOLI
CYSJ_SALTY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FENR_CHLRE
ERG3_CANGA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NOS1_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CATRO
                                                                                     OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CAVPO
                                                                                                                                                                                                                                                        1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                       Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NOS2
                                                                                                                                                                                                      US-08-833-506C-25
103
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query .
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SwissProt_39:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 496
1144
11147
1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         246
1429
1429
1434
1136
1202
1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              111153
111153
111153
111153
11153
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11174
11
                                                                                                                                                                                                                                                                                                     BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Perfect score:
                                                                                                                                                                                                                                                                                                     Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database :
                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                  Searched:
                                                                                                                                Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Result
No.
```

P18834 caenorhabdi P45745 bacillus su P00454 spirulina s P31973 synechococc Q55318 synechococc Q5318 synechocyst P31477 euglena gra Q44763 borrelia bu P51606 homo saplen P51607 rattus norv Q60759 mus musculu Q28125 bos taurus P25351 saccharomyc			9) (NOS, TYPE II)	Vertebrata; Euteleostomi; ae; Oryctolagus.	SEQUENCE FROM N.A. STRAIN-NEW ZEALAND WHITE; TISSUE-Heart; Broner C.W., Eledath F.M.; "Rabbit iducible nitric oxide synthase gene-NOS II.";	IS A MESSENGER MOLECULE M O(2) - CITRULINE +	OF FAD AND FWN. ALSO REQUIRES STABILIZE THE DIMERIC FORM OF	LMODULIN (BY	uced through a collaboration and the EMBL outstation	the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/				מדוות, וופוופי	FMN (PYRIMIDINE PART) (BY SIMILARITY). FDA (ADP PART) (BY SIMILARITY). FATA (FIANTH DADRY).	(BY SIMILARITY). BY SIMILARITY).	c crc64;
1 CC14 CAEEL 1 DHBF_BACSU 1 FENR_STISP 1 FENR_SYNP2 1 FENR_SYNP3 1 FENR_SYNP3 1 FENR_SYNP3 1 ATPE_BUGGR 1 FLIP_BORBU 1 RNBP_HUMAN 1 RNBP_RAT 1 GCDH_MOUSE 1 ICA3_BOVIN 1 ICA3_ROVIN	ALIGNMENTS); PRT; 496 AA.	Created) Last sequence update) Last annoctation update) . INDUCIBLE (EC 1.14.13.33) (FRAGMENT).	niata; Jeporid	'E; TISSUE-Heart; M.; oxide synthase gene-No;	NITRIC OXIDE (NO) WHICH CONS THROUGHOUT THE BODY L-ARGININE + N NADPH +	NITKIC CAIDE + N NADP(+). COFFACTOR: HEME. BINDS OF MOLE EACH OF FAD TETRAHYDROBYOPTERIN (BH4) WHICH MAY STABIL. THE ENZYME (BY SIMILARITY).	NOT STIMULATED BY (BY SIMILARITY). TO THE NOS FAMILY	s copyright. It is proditute of Bioinformatics	itics Institute. There istitutions as long as sment is not removed. Usense agreement (See httl	1b.ch).		ing; 1. fad; 1.	ימה, בימוז, כמבוווסטמבבות בבווטבווץ,	FMN (PYRIMIDINE PART) (BY	NADP (RIBOSE PART NADP (ADP PART) (1	397 MW; AOAlD303C57F0EEC
41.7 41.3 2948 41.3 2948 41.3 40.8 40.8 40.8 40.8 419 40.8 40.8 40.8 40.8 40.8 40.8 40.8		STANDARD;	(Rel. 39, (Rel. 39, (Rel. 39, SYNTHASE OS) (INOS	cuniculus (Rabbit). Metazoa; Chordata; Cre Sutheria; Lagomorpha; I	ZEALAND WHIT , Eledath F.	N: PRODUCES VERSE FUNCTI	OXIDE + N NA OR: HEME. BIN DROBIOPTERIN YME (BY SIMI	REGULATION: (ITY). ': HOMODIMER (ITY: BELONGS	PROT entry is	n Bioinforme n-profit ir id this state quires a lic	email to lic	14; AAB65618. 18; 1AMO. PR001433;	PR003097; -	amily.	<1 25 138 149 274 284	349 367 447 462	496 4A; 56
334 335 337 337 440 440 441 441 441 441 441 441 441 441		RESULT 1 NOS2_RABIT ID NOS2_RABIT	14; AY-200 AY-200 AY-200 IC OXI JCIBLE	NOSZ. Oryctolagus cuniculu. Eukaryota, Metazoa; Mammalia; Eutheria; NCBI_TaxID=9986;	SEQUENCE FR STRAIN-NEW Broner C.W.	-i - FUNCTIC WITH DI	NITRIC -!- COFACTO TETRAHY THE ENZ		This SWISS-between th	the Europea use by nc modified an entities re	or send an	EMBL; U8509 HSSP; P0038 InterPro; I	InterPro; IPR003097; Pfam; PF00667; FAD_binding; 1. Pfam; PF00175; oxidored_fad; 1.	Multigene f	NP_BIND <1 25 NP_BIND 138 149 NP_BIND 274 284	NP_BIND NP_BIND	NON_TER SEQUENCE
		RESUI NOS2 ID		00 00 8 00 00 8	R R R R R R R R R R R R R R R R R R R	2888	3888	8888	888	8888						. E. E.	FT SQ

Wed

us-08-833-506c-25.rsp

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDINE-92229444; PubMed-1373522; Xie O.-W., Cho H.J., Calaycay J., Mumford R.A., Swiderek K.M., Lee T.D., Ding A., Troso T., Nathan C.; "Cloning and characterization of inducible nitric oxide synthase from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
MEDLINE-92357701; PubMed-1379716;
LOWENSTEIN C.J., Glatt C.S., Bredt D.S., Snyder S.H.;
"Cloned and expressed macrophage nitric oxide synthase contrasts with the brain enzyme.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 X-RAY CRYSTALLOGRAPHY (2.35 ANGSTROMS) OF 77-496.
MEDLINE-20031637; PubMed-10562538;
Ghosh D.K., Crane B.R., Ghosh S., Wolan D., Gachhui R., Crooks C.,
Presta A., Talner J.A., Getzoff E.D., Stuchr D.J.;
"Inducible nitric oxide synthase: role of the N-terminal beta-hairpin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN-DBA/2J, BALB/CBYJ, SJL/J, NOD/LTJ, AND B10.S/J; TISSUE-Spleen; Ma R.Z., Teuscher C.;
                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
MEDLINE-92210618; PubWed-1372907;
Lyons C.R., Orloff G.J., Cunningham J.M.;
Molecular cloning and functional expression of an inducible nitric oxide synthase from a murine macrophage cell line.";
J. Biol. Chem. 267:6370-6374(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E.D.
                                                                                                                                                                                                                                                                                                                                             Mus musculus (Mouse).
Sukaryota Metazoa, Chordata, Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
NCBI_TaxID=10090;
                                                                                                                                                                                            NOS2_MOUSE STANDARD; PRT; 1144 AA.
P29477; 070515; 070516;
01-APR-1993 (Rel. 25, Created)
01-APR-1993 (Rel. 25, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
(INDUCIBLE NOS) (INOS) (MACROPHAGE NOS) (MAC-NOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
MEDLINE-96088781; Pubmed-7503239;
Kone B.C., Schwoebel J., Turner P., Mohaupt M.G., Cangro C.B.;
"Role of NF-kappa B in the regulation of inducible nitric oxide synthase in an MTAL cell line.";
Am. J. Physiol. 269:F718-F729(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 116-496.
MEDLINE-97477483; PubMed-9334294;
Crane B.R., Arval A.S., Gachhul R., Wu C., Ghosh D.K., Getzoff Stuehr D.J., Tainer J.A.;
The structure of nitric oxide synthase oxygenase domain and inhibitor complexes."
                                       .;
0
Score 99; DB 1; Length 496;
Pred. No. 3.6e-09;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ma R.Z., Teuscher C.; Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Proc. Natl. Acad. Sci. U.S.A. 89:6711-6715(1992).
 96.1%;
94.4%;
                                                                                              356 GIAPFRSFWQQRLHDSQH 373
                                                                       1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             mouse macrophages.";
Science 256:225-228(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Science 278:425-431(1997).
                                     Conservative
                Local Similarity
nes 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
 Query Match
                                 Matches
                                                                                                                                                                                 NOS2_MOUSE
                                                                                                                                                                                                  ò
                                                                                                         qq
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN. ASPIRIN INIBIRS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY BE EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOLECULE
                                                                                                                                                                                                                                                                                                                                                                   TISSUE-Macrophage;
MEDLINE=95372392; PubMed=7544010;
MEDLINE=95372392; PubMed=7544010;
Amin A.R., Vyas P., Attur M., Leszczynska-Piziak J., Patel I.R.,
Welssmann G., Abramson S.B.;
"The mode G action of aspirin-like drugs: effect on inducible nitric
oxide synthase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Proc. Natl. Acad. Sci. U.S.A. 92:7926-7930(1995).

-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIAPES TUMORICIDAL AND BACTERICIDAL ACTIONS.

-!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADP(+).

-!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                   X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 77-496.
MEDLINE-98182450; PubMed-9516116;
Crane B.R., Arvai A.S., Ghosh D.K., Wu C., Getzoff E.D., Stuehr D.J.,
                                                                                                                                   "Structure of nitric oxide synthase oxygenase dimer with pterin and substrate ".
                                                                                                                                                                                                                           MEDLINE-20031638; PubMed-1056259; Crane B.R., Rosenfeld R.J., Arvai A.S., Ghosh D.K., Ghosh S., aliner J.A., Stuehr D.J., Getzoff E.D.; "N'terminal domain swapping and metal ion binding in nitric oxide synthase dimerization."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -!- SUBUNIT: HOMODIMER.
-!- TISSUE SPECIFICITY: MACROPHAGES.
-!- INDUCTION: BY TREATMENT WITH ENDOTOXINS OR CYTOKINES.
-!- SIMILARITY: BELONGS TO THE NOS FAMILY.
in dimerization and
                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.35 ANGSTROMS) OF 77-499
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AF065922; AAC17917.1; ALT_INIT. AF065923; AAC17918.2; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; M92649; -; NOT_ANNOTATED_CDS.
EMBL; M84373; AAA39834.1; -.
EMBL; U43428; AAC52356.1; -.
hook and pterin-binding segment itetrahydroblopterin interaction. EMBO J. 18:6260-6270(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AF065919; AAC17914.1; -
AF065920; AAC17915.1; -
AF065921; AAC17916.2; -
                                                                                                                                                                          Science 279:2121-2126(1998).
                                                                                                                                                                                                                                                                                                                     EMBO J. 18:6271-6281(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M87039; AAA39315.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-99.
08-DEC-99.
04-FEB-00.
06-FEB-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-NOV-98.
23-MAR-99.
23-MAR-99.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1NOC; 18-NOV-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-NOV-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A43271; A43271
A42166; A42166
                                                                                                                                                                                                                                                                                                                                                      EFFECT OF ASPIRIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    THE ENZYME
                                                                                                                            Tainer J.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1NOS;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3NOD;
1DF1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1DWV;
1DWW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LNOD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2NOD;
                                                                                                                                                               substrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PDB;
```

3

```
[3]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                    TISSUE-Liver
                                                                                                                                                             astrocytes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Klahr S.
     ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus
                                                                                                                                                                                                                                                                                                                                                                                         CALMODULIN-BINDING (POTENTIAL).
FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE=95309542; PubMed=7540573;
Karlsen A.E., Andersen H.U., Vissing H., Larsen P.M., Fey S.J.,
Cuartero B.G., Madsen O.D., Petersen J.S., Mortensen S.B.,
Mandrup-Poulsen T., Boel E., Nerup J.;
"Cloning and expression of cytokine-inducible nitric oxide synthase
cDNA from rat islets of Langerhans.";
Diabetes 44:753-758(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE-Vascular smooth muscle;
BEDILNE-29191721, Pubmed-7680561;
Nunokawa Y., Ishida N., Tanaka S.;
"Cloning of inducible nitric oxide synthase in rat vascular smooth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NOS2_RAT STANDARD; PRT; 1147 AA.
006518; p97774; 035766; 064558; Q64005; Q63267;
01-UDN-1994 (Rel. 29; Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
NITRIC OXIDE SYNTHASE; INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
(INDUCIBLE NOS) (INOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -> L (IN STRAIN SJL/J).

-> F (IN STRAIN BALB/CBYJ).

-> T (IN REF. 4).

-> V (IN REF. 2).

-> G (IN REF. 2).

0735BE676113457F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 1; Length 1144;
8.9e-09;
                                                                                                                                                                                                                                                                                                                  Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -> R (IN STRAIN NOD/LTJ).
-> L (IN STRAIN SJL/J).
-> F (IN STRAIN BALB/CBYJ
                                                                                                                                                                                                                                                                                                                                        Zinc; Metal-binding; Multigene family; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Biochem. Biophys. Res. Commun. 191:89-94(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN-WISTAR; TISSUE-Pancreatic islets;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 99;
Pred. No. 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 > 5
^ ^
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ZINC.
ZINC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ٢
                                                                                                                                                                                                                                                                                                                                                                         HEME
                                                                                                                                                                                                        Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
PRIWTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96.1%;
94.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     130574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   979 GIAPFRSFWQQRLHDSQH 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 94.4
Matches 17; Conservative
                        PDB; 1QOM; 15-DEC-99.
PDB; 1DD7; 29-MAR-00.
MGD; MGI:9761; NOS-2.
InterPro; IPR001094; InterPro; IPR001433; InterPro; IPR001433; InterPro; IPR003097; InterPro; IPR003097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1085
104
109
211
967
968
                                                                                                                                                                                                                                                                                                                                                                                                                    648.
772
907
X; 06-FEB-00.
M; 15-DEC-99.
7; 29-MAR-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      muscle cells."
     1DWX;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                                                   BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOS2_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HERRA A REPORT OF THE REPORT O
     SPETT THE TENT OF THE PRESENTATION OF THE PRES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
```

```
[9]
SEQUENCE OF 426-788 FROM N.A.
STRAIN=DAHL/RAPP SALT SENSTIIVE STRAIN; TISSUE-Vascular smooth muscle;
MEDLINE-98195092; PubMed-9535415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN=SPRAGUE-DAWLEY; TISSUE=Hepatocytes; MEDLINE=93221515; PubMed=7682072; Mood E.R., Berger H. Jr., Sherman P.A., Lapetina E.G.; "Hepatocytes and macrophages express an identical cytokine inducible nitric oxide synthase gene."; Biochem. Biophys. Res. Commun. 191:767-774(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=SPRAGUE-DAWLEY; TISSUE-Aorta;
MEDLINE=94325351; PubMed=7519448;
Geng Y.J., Almquist M., Hansson G.K.;
"CDNs cloning and expression of inducible nitric oxide synthase from rat vascular smooth muscle cells.";
Biochim. Biophys. Acta 1218:421-424(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Chen P.Y., Gladish R.D., Sanders P.W.;
"Vascular smooth muscle nitric oxide synthase anomalies in Dahl/Rapp salt-sensitive rats.";
Hypertension 31:918-924(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Futaki S., Niwa M.;
"Sequence analysis of inducible nitric oxide synthase in rat kidney,
lung, and uterus." 19:1374-1376(1996).
Biol. Pharm. Bull. 19:1374-1376(1996).
                                                                                                            nitric oxide synthase from rat
                                                                                                                                                                                                                                                                                                                                                  Adachi H., Iida S., Oguchi S., Ohshima H., Suzuki H., Nagasaki K., Kawasaki H., Sugimura T., Esumi H.; Molecular cloning of a cDNA encoding an inducible calmodulin-dependent nitric-oxide synthase from rat liver and its expression in COS I cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Morrissey J.J., McCracken R., Kaneto H., Vehaskari M., Montani D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location of an inducible nitric oxide synthase mRNA in the normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN=WISTAR; TISSUE-Renal glomerulus;
Saura M., Zaragoza C., Martinez-Dalmau R., Perez-Sala D., Lamas S
"Advances in the studies of NO synthesis regulation in mesanglial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A..
MEDLINE-97070590; Pubmed-8913516;
Tsutsumishita Y., Kawai Y., Takahara H., Onda T., Miyoshi J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
Kosuga K., Yui Y., Hattori R., Sase K., Eizawa H., Aoyama T.,
Inoue R., Sasayama S.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Cloning of an inducible nitric oxide synthase from rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-SPRAGUE-DAWLEY; TISSUE-Renal glomerulus; MEDLINE-94276509; PubMed-7516453;
STRAIN-SPRAGUE-DAWLEY; TISSUE-Astrocytes; BEDLINE-942131594; PUDMed-7513765; Galea E., Reis D.J., Feinstein D.L.; "Cloning and expression of inducible nitr
                                                                                                                                                                                                                                                       SEQUENCE FROM N.A., AND PARTIAL SEQUENCE
                                                                                                                                                                            Neurosci. Res. 37:406-414(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   polymorphonuclear neutrophils.";
Endothelium 2:217-221(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Eur. J. Biochem. 217:37-43(1993)
                                                                                                                                                                                                                                                                                                                           MEDLINE-94039059; PubMed-7693462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       kidney.";
Kidney Int. 45:998-1005(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 479-655 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 509-740 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nefrologia 16:35-39(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   [5]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
```

```
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                      CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                          Query Match
 CONFLICT
           CONFLICT
                    CONFLICT
                                                                                                                                    CONFLICT
                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                    Local
                                                                                                                                                                                                                                                   Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                      NS2A_HUMAN
 ò
                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                SIMILARITY).
SUBUNIT: HOMODIMER (BY SIMILARITY).
SUBUNIT: HOMODIMER (BY SIMILARITY).
TISSUE SPECIFICITY: IN NORMAL KIDNEY, EXPRESSED PRIMARILY IN THE MEDULLARY THICK ASCENDING LIMB, WITH MINOR AMOUNTS IN THE MEDULLARY COLLECTING DUCT AND VASA RECTA BUNDLE.
INDUCTION: BY INTERFERON GAMMA AND LIPOPOLYSACCHARIDE.
SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                   THE ENZYME.
ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN. ASPIRIN
INHIBITS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY BE
EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FAD (FLAVIN PART) (BY SIMILARITY)
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
ZINC (BY SIMILARITY).
ZINC (BY SIMILARITY).
F. Y (IN REF. 7).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ne family.
HEME (BY STMILARITY).
CALMODULIN-BINDING (POTENTIAL).
FAN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
                                                                                                                                                    MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REF. 1)
REF. 3)
REF. 8)
REF. 3)
REF. 8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ن <u>=</u> ح به
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NIZ W H O O O O
                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro: IPR001094; -.
InterPro: IPR001433; -.
InterPro: IPR001433; -.
InterPro: IPR001709; -.
PEm; PF00667; FAD_binding; 1.
PEm; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Zinc; Metal-binding; Multigene
BINDING 197 197 HE
                                                                                                                                                                                                                                                                                                                                                                                         EMBL, AF006619; AAC16401.1; --
EMBL; AF006620; AAC16402.1; --
EMBL; U48829; AAB18620.1; --
EMBL; S71597; AAB31028.2; --
EMBL; L136063; AAC02242.1; --
HIR; JC1472; JC1472.
                                                                                                                                                                                                                                                                                                                                    . U03699; AAC13747.1; -. D12520; BAA02090.1; -. L12562; AAA41720.1; -. X76881; CAA54208.1; -. D44591; BAA12035.1; -.
       SEQUENCE OF 420-479 FROM N.A. TISSUE-Myocardium; Michel T., Balligand J.-L.;
                                                                                                                                                                                                                                                                                                                                                                                          AF006619; AAC16401.1; -
                                                                                                                                                                                                                                                                                                                 EMBL; D14051; BAA03138.1; -. EMBL; U26686; AAA85861.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
NP_BIND
NP_BIND
NP_BIND
NP_BIND
NP_BIND
METAL
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CONFLICT
                                                                                                                                                                                                                                                                                                                                     EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
EMBL;
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Colorectal adenocarcinoma;
MEDLINE-94032282; PubMed-7692964;
Sherman P.A., Laubach V.E., Reep B.R., Wood E.R.;
"Purification and cDNA sequence of an inducible nitric oxide synthase
                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-Liver;
MEDLINE-93234523; PubMed-7682706;
Geller D.A., Lowenstein C.J., Shapiro R.A., Nussler A.K.,
Geller D.A., Lowenstein C.J., Shapiro R.A., Nussler A.K.,
di Silvio M., Wang S.C., Nakayama D.K., Simmons R.L., Snyder S.H.,
Billiar T.R.;
"Molecular cloning and expression of inducible nitric oxide synthase
from human hepatocytes.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Chondrocytes;
MEDLINE=94(68614; PubMed=7504305;
Charles I.G., Palmer R.M.J., Hickery M.S., Bayliss M.T.,
Chubb A.P., Hall V.S., Moss D.W., Moncada S.;
"Cloning, characterization, and expression of a cDNA encoding an
                                                                                                                                                                                                                                                                                                                                                                                               NG2A_HUMAN STANDARD; PRT; 1153 AA.
P35228; Q16692; Q60757; Q16263;
Q1-FEB-1994 (Rel. 28, Created)
Q1-FEB-1996 (Rel. 31, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
                                                                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                                                                         Score 99; DB 1; Length 1147; Pred, No. 9e-09;
                                                                 8
                                                                                                                                                                                                                                                                                                 Indels
           5
                                                               7 AND
                                                                                                                                                                                       6.
                                                                                                                                                                                                           AND 6).
          AND
                                                                                                                                                                                       AND
                                                                                                                                                                                                                                           (IN REF. 1).
                                                                                                                                                                                                                                 10)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Proc. Natl. Acad. Sci. U.S.A. 90:3491-3495(1993)
                                                                                                                                                                                                                                                     -> P (IN REF. 10)
                               REF.
REF.
REF.
REF.
REF.
REF.
REF.
                                                                                                                                                                REF.
REF.
REF.
                                                                                                                                          REF
                                                                                                                                                                                                                                                                                                 0; Mismatches
                                                      POZSKKKKZOP
                                                                                                                                                                                                                     from a human tumor cell line.";
Biochemistry 32:11600-11605(1993).
                                                                                                                                                                                                                                                                            96.18;
                                                                                                                                                                                                                                                                                                                                   1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                 Conservative
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                       Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID~9606;
                                                     349
380
380
380
380
381
381
381
380
380
380
380
380
```

S

Wed

```
Guo F.H., de Raeve R.H., Rice T.W., Stuehr D.J., Thunnissen F.B.J.M., Erzurum S.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          'Continuous nitric oxide synthesis by inducible nitric oxide synthase
                                                                    TISSUE-Articular chondrocytes;
MEDLINE-94368816; PubMed-7522054;
Maier R., Bilbe G., Rediske J., LOLZ M.;
Inducible nitric oxide synthase from human articular chondrocytes:
cDNA cloning and analysis of mRNA expression.";
Biochim. Biophys. Acta 1208:145-150(1994).
                                                                                                                                                                                                                                                        Park C.S., Pardhasaradhi K., Gianotti C., Villegas E., Krishna G.; "Human retina expresses both constitutive and inducible isoforms of nitric oxide synthase mRNA.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ţ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       McLay J.S., Chatterjee P., Nicolson A.G., Jardine A.G., McKay N.G., Ralston S.H., Grabowski P., Haites N.E., Macleod A.M.,
                                                                                                                                                                                                                                                                                                                                                                   TISSUE=Glioblastoma;
MEDLINE=95155267; PubMed=7531687;
Hokari A., Zeniya M., Esumi H.;
"Cloning and functional expression of human inducible nitric oxide synthase (NOS) cDNA from a glioblastoma cell line A-172.";
J. Biochem. 116:575-581(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-96047340; PubMed-7558036;
Bloch K.D., Wolfram J.R., Brown D.M., Roberts J.D. Jr., Zapol D.G., Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.;
"Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, and NOS2C) colocalize to human chromosome 17.";
Genomics 27:526-530(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Cardiac myocytes;

BEDLINE-2704504, PubMed-9160867;
LUSS H., Li R.-K., Shapiro R.A., Tzeng E., McGowan F.X., Yoneyama Hatakayama K., Geller D.A., Mickle D.A.G., Simmons R.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Billiar T.R.; Dedifferentiated human ventricular cardiac myocytes express inducible nitric oxide synthase mRNA but not protein in response IL-1. TNF, IFNgamma, and LPS.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               'Nitric oxide production by human proximal tubular cells: a novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHARACTERIZATION.
MEDLINE-98389865; PubMed-9721329;
Taylor B.S., Alarcon L.H., Billiar T.R.;
"Inducible nitric oxide synthase in the liver: regulation and
inducible nitric oxide synthase from the human chondrocyte."; Proc. Natl. Acad. Sci. U.S.A. 90:11419-11423(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           in normal human airway epithelium in vivo.";
Proc. Natl. Acad. Sci. U.S.A. 92:7809-7813(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  [12]
X-RAY CRYSTALLOGRAPHY (2.55 ANGSTROMS) OF 74-504
                                                                                                                                                                                                                                                                                                                Biochem. Biophys. Res. Commun. 205:85-91(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 J. Mol. Cell. Cardiol. 29:1153-1165(1997).
                                                                                                                                                                                                                                       MEDLINE=95091827; PubMed=7528017;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
TISSUE-Airway epithelium;
MEDLINE-95372368; PubMed-7544004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-Kidney;
MEDLINE-95165725; PubMed-7532248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  immunomodulatory mechanism?";
Kidney Int. 46:1043-1049(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 380-473 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             lokhimiia 63:766-781(1998).
                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHARACTERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hawksworth G.M.;
                                                                                                                                                                                                                          rissue=Retina;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  function.
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                        reveals striking active-site conservation.";

Nat. Struct. Biol. 6:233-242(1999).

-!- EUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIATES TUMORICIDAL AND BACTERICIDAL ACTIONS.

-!- CAPALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADP(+).

-!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                 THE ENZYME (BY SIMILARITY).

-1- ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (IN CONTRAST WITH MOUSE NOS2).

ENZYME AND EFECTS MAY BE EXERTED AT THE LEVEL OF THIS ENZYMESAID AND EFECTS MAY BE EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY (BY SIMILARITY).

-1- SUBBUIT: HOMODIMER.

-1- TISSUE SPECIFICITY: EXPRESSED IN THE LIVER, RETINA, BONE CELLS AND AIRWAY EPITHELIAL CELLS OF THE LUNG. NOT EXPRESSED IN THE
                Li H., Raman C.S., Glaser C.B., Blasko E., Young T.A., Parkinson J.F., Whitlow M., Poulos T.L.;
"Crystal structures of zinc-free and -bound heme domain of human inducible nitric-oxide synthase. Implications for dimer stability and comparison with endothelial nitric-oxide synthase.";
J. Biol. Chem. 274:21276-21284(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding;
Heme; Phosphorylation; Zinc; Metal-binding; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CALMODULIN-BINDING (POTENTIAL).
FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
                                                                                                                                                       X-RAY CRYSTALLOGRAPHY (2.25 ANGSTROMS) OF 82-528.
MEDLINE=99173237; PubMed=10074942;
Fischmann T.O., Hruza A., Niu X.D., Fossetta J.D., Lunn C.A.,
Dolphin E., Prongay A.J., Reichert P., Lundell D.J., Narula S.K.,
Weber P.C.;
                                                                                                                                                                                                                                                         'Structural characterization of nitric oxide synthase isoforms
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -! - INDUCTION: BY TREATMENT WITH ENDOTOXINS OR CYTOKINES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -!- SIMILARITY: BELONGS TO THE NOS FAMILY.
MEDLINE=99340067; PubMed=10409685;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HEME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00667; FAD_binding; 1. Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; L09210; AAA59171.1; --
EMBL; X73029; CAA51512.1; --
EMBL; V05810; AAA5665.1; --
EMBL; U05810; AAA5666.1; --
EMBL; U01511; AAA85041.1; --
EMBL; U20141; AAB80041.1; --
EMBL; U20141; AAB60366.1; --
EMBL; S75615; AAC19133.1; --
PIR; A47475; A47475.
PDB; ZNST; O7-JAN-00.
PDB; ZNST; O7-JAN-00.
PDB; 4NOS; O4-FEB-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR001094; -. InterPro; IPR001433; -. InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  200
529
654
778
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR003097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  200
509
623
767
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PLATELETS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            163730;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BINDING
```

ø

```
send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-Leukocyte;
MEDLINE-96047340; PubMed-7558036;
                                                                                      InterPro; IPR003097; -.
Pfam: PF00667; FAD_binding; 1.
Pfam: PF00165; oxidored_fad; 1.
PRINTS: PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                      EMBL; AF049656; AAC83553.1; -. EMBL; AF051164; AAC83554.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                   88.3%;
94.1%;
                                                                                                                                                                                                                                                                                                                                                                                   130528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 GIVPFRSFWQQRLHDSQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                         InterPro; IPR001094; -. InterPro; IPR001433; -. InterPro; IPR001709; -.
                                                       InterPro; IPR001094;
                                            HSSP; P29477; INOC
                                                                                                                                                                                                                                                                                                                                                                                                                                Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=9606;
                                                                                                                                                                                         620
764
900
975
1073
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  30-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Sim
Matches 16;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NS2C_HUMAN
014961;
                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                DOMAIN
NP_BIND
NP_BIND
                                                                                                                                                                                                                          NP_BIND
NP_BIND
METAL
                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                 CONFLICT
                                                                                                                                                                                                               NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NS2C_HUMAN
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: PRODUCES NITTE OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDITATES FUNCKIONS AND BACTORINS. MAY BE INVOLVED IN THE PATHOGENESIS OF DILATED CARDIOMYOPATHY OR OF EXERCISE INTOLERANCE OBSERVED IN PATIENTS WITH CHRONIC HEART FAILURE.
CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADP(+).
COPACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHURNESHOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                   â
                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                          NS2D_HUMAN STANDARD; PRT; 1147 AA.
06051; 060604;
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
01-0CT-2000 (Rel. 40, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE IID (EC 1.14.13.39) (NOS, TYPE II (INDUCIBLE NOS) (INOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SUBDITIT: HOWODIMER (BY SIMILARITY).
TISSUE SPECIFICITY: EXPRESSED IN THE HEART AND SKELETAL MUSCLE DURING CHRONIC HEART FAILURE, BUT NOT IN HEALTHY INDIVIDUALS.
SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                          (POTENTIAL)
                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-Skeletal muscle, and Heart muscle;
MEDLINE-9906690; PubMed-9851365;
Adams V., Krabbes S., Jiang H., Yu J., Rahmel A., Gielen S.,
Schuler G., Hambrecht R.,
"Complete coding sequence of inducible nitric oxide synthase from human heart and skeletal muscle of patients with chronic heart
                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
           (RIBOSE PART) (BY SIMILARITY).
(ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                            ö
 (FLAVIN PART) (BY SIMILARITY)
                                                                                                                                                                                                   Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THE ENZYME (BY SIMILARITY).
ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                           1; Indels
                                                                                      (IN REF. 4).
(IN REF. 4).
(IN REF. 4).
(IN REF. 9).
(IN REF. 2).
(IN REF. 5 AND 6).
(IN REF. 7).
                                                       CAPK)
CAPK)
CAPK)
                                                                                                                                                                                                      DB 1;
                                                                                                                                                                                                                9e-09;
                                                         PHOSPHORYLATION
                                                                 PHOSPHORYLATION
PHOSPHORYLATION
                                                                                                                                                                                                               Pred. No. 9e-0
0; Mismatches
                                                                                                                                                                                                      Score 99;
                                                                                         ០ឯ>
                                                                                                                         энцынж
                                                                                        \uparrow \uparrow
                                                                                                                                                                                                                                                            failure.";
Nitric Oxide 2:242-249(1998)
                                                                                                                                                                                                      96.18;
                                                                                                                                                                                                                                              1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                            Conservative
                                                                                        23
154
177
266
423
423
439
608
676
800
913
996
1091
110
115
234
578
892
                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (Human)
                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SIMILARITY).
                                                                                                                                                                                                                        17;
                                                                                                                      CONFLICT
                                                                                                 CONFLICT
                                                                                                                                                                   CONFLICT
          NP_BIND
NP_BIND
METAL
                                                      MOD_RES
MOD_RES
MOD_RES
                                                                                                                                                                                                   Query Match
                                                                                        CONFLICT
                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                     RESULT 5
NS2D_HUMAN
                                                                                                                                                                                                                           Matches
ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bloch K.D., Wolfran J.R., Brown D.M., Roberts J.D. Jr., Zapol D.G., Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.;
Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.;
Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, and NOS2C) colocalize to human chromosome 17.";
Genomics 27:526-530(1995).
-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIATES TUNORICIDAL AND BACTERICIDAL ACTIONS.
-!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) - CITRULLINE +
                                                                HEME (BY SIMILARITY).

CALMODULIN-BINDING (POTENTIAL).

FAM (PYRIMIDINE PART) (BY SIMILARITY).

FAD (ADP PART) (BY SIMILARITY).

FAD (FLAVIN PART) (BY SIMILARITY).

NADP (ADP PART) (BY SIMILARITY).

ZINC (BY SIMILARITY).

ZINC (BY SIMILARITY).

ZINC (BY SIMILARITY).

A - S (IN AAC83554).

C -> E (IN AAC83554).

C -> E (IN AAC83554).

A - T (IN AAC83554).

TL -> NF (IN AAC83554).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
Oxidoreductase; NaDP: FAD; FMN; Calcium-binding; Calmodulin-binding; Heme; Zinc; Metal-binding; Multigene family.
BINDING 197 197 HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC-OXIDE SYNTHASE IIC (EC 1.14.13.39) (NOS, TYPE II C) (NOSIIC)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FF7E4C7ABA76D820 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 91; DB 1;
Pred. No. 2e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            69 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
```

us-08-833-506c-25.rsp

```
Bos taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                             2NOS
                                                                                                                                                                                             HSSP; P29477;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        macrophages.
                                                                                                                                                                                                                                                                                                                                                                                                                                 NP_BIND
NP_BIND
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                  UNIB_N
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOS2_BOVIN
   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                              This SWISS-PROT entry is copyright. It is produced through a collaboration between the SWISS Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modifited and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRAIN-HARTLEY; TISSUE-Lung;
MEDLINE-98343971; PubMed-9677342;
Shirato M., Sakamoto T., Uchida Y., Nomura A., Ishii Y., Iijima H.,
Goto Y., Hasegawa S.;
"Molecular cloning and characterization of Ca2+-dependent inducible
nitric oxide synthase from quinea-pig lung.";
Blochem. J. 333:795-799(1998).
-I- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
WITH DIVERSE FUNCTIONS THROGGHOUT THE BODD.
NITRIC OXIDE + N NADP(+).

COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROSIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE ENZYME (BY SIMILARIY).

ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -i- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + N NTRIC OXIDE + N NADP(+).

-i- COFACTOR: HEME. BINDS OWE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPPERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBUNIT: HOMODIMER (BY SIMILARITY).
TISSUE SPECIFICITY: EXPRESSED IN THE LUNG AND COLON. NOT DETECTED IN THE HEART, AORTA, LIVER, KIDNEY, AND SPLEEN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                             Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding; Heme; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THE ENZYME (BY SIMILARITY).
ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (IN CONTRAST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Cavia porcellus (Guinea pig).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
                                                                                                                                                                                                                                                                                                                                                         NADP (RIBOSE PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     30-WAY-2000 (Rel. 39, Created)
30-WAY-2000 (Rel. 39, Last sequence update)
30-WAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYMTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                Score 86; DB 1; Length 69;
Pred. No. 6.3e-08;
); Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                    2C29D595F93FB293 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT; 1149 AA
                                                                   SIMILARITY).
SUBUNIT: HOMODIMER (BY SIMILARITY).
SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                   EMBL; U18335; AAC50245.1; -. EMBL; U18334; AAC50245.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 83.5%;
Best Local Similarity 88.2%;
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                      8432 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GIVPFRSFWQQRLHDSQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      14 GIAPFHSFWQQRLHDSQ 30
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WITH MOUSE NOS2)
                                                                                                                                                                                                                                                                                  P00388; 1AMO.
                                                                                                                                                                                                                                                                                                                                                                                    69 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID-10141;
                                                                                                                                                                                                                                                                                                                                                                        69
                                                                                                                                                                                                                                                                                                600720; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NOS2 OR NOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOS2_CAVPO
054705;
                                                                                                                                                                                                                                                                                                                                                       NP_BIND
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                           NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NOS2_CAVPO
                                                                                                                                                                                                                                                                                  HSSP;
                                                                                                                                                                                                                                                                                                 MIM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
 ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Bone marrow macrophage;
MEDIINE=52238970; Bubmed=7536776;
Adler H., Frech B., Thoeny M., Pfister H., Peterhans E., Jungl T.W.;
"Inducible nitric oxide synthase in cattle. Differential cytokine regulation of nitric oxide synthase in bovine and murine
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding; Heme; Multigene family.

BINDING 199 199 HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Pulmonary artery;
MEDLINE-96047340; PubMed-7558036;
Bloch K.D., Wolfram J.R., Brown D.M., Roberts J.D. Jr., Zapol D.G.,
Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CALMODULIN-BINDING (POTENTIAL).
FMN (PYTEMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
WADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
-!- INDUCTION: BY LIPOPOLYSACCHARIDE (LPS) IN KIDNEY, SPLEEN, AN COLON. EXPRESSION IS REDUCED IN THE PRESENCE OF LPS IN LUNG.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOS2_BOVIN STANDARD; PRT; 246 AA. 027995; 027995; 027995; 02.01-005; 02.01997 (Rel. 35, Created) 30-MAY-2000 (Rel. 39, Last sequence update) 30-MAY-2000 (Rel. 39, Last annotation update) NITRIC OXIDE SYMTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II) (INDUCIBLE NOS) (INOS) (NOSII) (FRAGMENTS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 84; DB 1; Length 1149;
Pred. No. 3e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001094; --
InterPro; IPR001433; --
InterPro; IPR001109; --
InterPro; IPR003097; --
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Immunol. 154:4710-4718(1995).
                                                                                                                                                                                                                                                                                          EMBL; AF027180; AAC33177.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 111-246 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           81.6%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   130631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS; PR00369; FLAVODOXIN PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 1-110 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 GIVPFRSFWOORLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Bovidae; Bovinae; Bos.
NCBL_TaxID=9913;
```

œ

```
MEDLINE~96212184; PubMed~8626668;
                                        This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -i- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIATES TUMORICIDAL ACTICIDAL ACTIONS.
-i- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) - CITRULLINE +
                                                                                                                                                                                                                                            NITRIC OXIDE + N NADP(+).

COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FWN. ALSO REQUIRES TETRAHYDROSIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE ENZYME (BY SIMILARIX).

ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOSI_MOUSE STANDARD; PRT; 1429 AA.
092004; 064208;
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 40, Last annotation update)
NITRIC-OXIDE SYNTHASE, BRAIN (EC 1.14.13.39) (NOS, TYPE I) (NEURONAL NOS) (N-NOS) (NNOS) (CONSTITUTIVE NOS) (NC-NOS) (BNOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ogura T., Yokoyama T., Fujisawa H., Kurashima Y., Esumi H.; "Structural diversity of neuronal oxide synthase mRNA in the nervous
NOS2B, and NOS2C) colocalize to human chromosome 17."; Genomics 27:526-530(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HEME (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 79; DB 1; Length 246;
Pred. No. 3.8e-06;
3; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam; PF00175; oxidored_fad; 1.
Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       246
28748 MW; 87C2E330C86A27F4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Biochem. Biophys. Res. Commun. 193:1014-1022(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. (ISOFORMS N-NOS-1 AND N-NOS-2)
                                                                                                                                                                                                                                                                                                                                                                                                                               SUBUNIT: HOMODIMER (BY SIMILARITY). SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. (ISOFORM NNOS MU)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-BALB/C; TISSUE-Brain;
MEDLINE-93312283; PubMed-7686743;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .;
ض
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; U14640; AAC48470.1; -. EMBL; U18331; AAC48479.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            76.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     80.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   112 PFRSFWQQRLHEAEH 126
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; IPR001433; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 PFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   35
215
111
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-Skeletal muscle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mus musculus (Mouse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3NOD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP; P29477;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NP_BIND
NON_CONS
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 system.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 9
NOS1_MOUSE
                               STATE THE STATE OF ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ID DTT ACC DDT TABLE REPAREMENT OF THE REPAREMEN
```

```
BERKETH THE SARCOLEMENT

(WITH THE DYSTROPHIN GIRCOPPENS.)

(ALTERNATIVE PRODUCTS: FIVE ISOFORMS; N-NOS-1 (SHOWN HERE), N-NOS-2, NOSO BETA, NOSO GAMA AND NNOS MU/MUSCLE-SPECIFIC; ARE PRODUCED BY ALTERNATIVE SPLICING.

(TISSUE SPECIFICITY: WIDELY EXPRESSED IN THE NERVOUS SYSTEM: EXPRESSED IN CREBELLUM, OLFACTORY BULB, HIPPOCAMPUS, NIDBRAIN, CREBELLUM, OLFACTORY BULB, HIPPOCAMPUS, AND BRAIN, CREBELLUM, DNS, MEDULLA GOLONGATA, AND STRINAL CORD. ALSO FOUND IN SKELETAL MUSCLE, WHERE IT IS LOCALIZED BENEATH THE SARCOLEMMA OF FAST TWITTEN MUSCLE FIBERS, AND IN SPLEEN, HEART, KIDNEY, AND IN SKELETAL AND STRAND OF THE NERVOUS SYSTEM. NNOS BETA AND GAMMA OCCUR IN A REGION-SPECIFIC MANNER IN THE BRAIN AND NNOS BETA EXPRESSION IS DEVELOPMENTALLY REGULATED. NNOS MU IS ONLY FOUND IN MATURE SKELETAL AND CARDIAC MUSCLES.

(INDUCTION: BY CHOLINERGIC AGONISTS ACTING AT INOSITOL PHOSPHATE-INDUCTION: BY CHOLINERGIC AGONISTS ACTING AT INOSITOL PHOSPHATE-ISOFORM PARTICIPATES IN PROTEIN PROPERIN IN WISCLES.

(INDUCTION: BY CHOLINERGIC AGONISTS ACTING AT IN MUSCLES.)

(INDUCTION: BY CHOLINERGIC AGONISTS ACTING AND IS RESPONSIBLE FOR TARGETING NNOS TO SYNAPTIC MEMBRANES IN MUSCLES.)

(INDUCTION: BY CHOLINERGIZ NON SYNAPTIC MEMBRANES IN MUSCLES.)

(INDUCTION: BY CHOLINERGIZ NON SYNAPTIC MEMBRANES IN MUSCLES.)

(INDUCTION: BY CHOLINES IN THE CYTOSOL.)

(INDUCTION: BY CHOLINES IN THE CYTOSOL.)

(INDUCTION: BY CHOULD THE HOS FMAILY.)

(INDUCTION: BY CHOLINES IN THE CYTOSOL.)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DEV. NEUCOSCI. 19:224-231(1997).

-1- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN THE BRAIN AND PERIPHERAL NERVOUS SYSTEM, NO DISPLAYS MANY PROPERTIES OF A NEUROTRANSMITTER. ISOFORM NNOS MU MAY BE AN EFFECTOR ENZYME FOR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      THE DYSTROPHIN COMPLEX.

-!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE +

NITTIC OXIDE + N NADP(+).

-!- COFACTOR: HEME: BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES

-!- TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF

THE ENEXME (BY SIMILARITY).

-!- SUBGUIT: HONOPIMER (BY SIMILARITY).

-!- SUBGUIT: HONODIMER (BY SIMILARITY).
Silvagno F., Xia H., Bredt D.S.;
"Neuronal nitric-oxide synthase-mu, an alternatively spliced isoform expressed in differentiated skeletal muscle.";
J. Biol. Chem. 271:11204-11208(1996).
                                                                                                                                                                                                                                                  MU.
                                                                                                                                                                                                                                                                                         MEDLINE-97351924; PubMed-9208206;
Brenman J.E., Xia H., Chao D.S., Black S.M., Bredt D.S.;
"Regulation of neuronal nitric oxide synthase through alternative
                                                                                                                                                                                                                                             ALTERNATIVE SPLICING (ISOFORMS NNOS BETA; NNOS GAMMA AND NNOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pfam; PF00667; FAD_binding; 1. Pfam; PF00595; PDZ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; D14552; BAA03415.1; -. EMBL; S81982; AAB36469.1; -. HSSP; P29477; 2NOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MGD; MGI:97360; Nos1.
InterPro; IPR001094; -.
InterPro; IPR001433; -.
InterPro; IPR001478; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR001709;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   IPR003097;
                                                                                                                                                                                                                                                                                                                                                                                                                                          transcripts.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro;
InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   interPro;
```

0

```
ö
                                                                                         SIMILARITY).

CALMODULIN-BINDING (POTENTIAL).

FAM (PYRIMIDINE PART) (BY SIMILARITY).

FAD (ADP PART) (BY SIMILARITY).

FAD (FLAVIN PART) (BY SIMILARITY).

NADP (RIBOSE PART) (BY SIMILARITY).

NADP (ADP PART) (BY SIMILARITY).

NADP (AND PART) (BY SIMILARITY).

MISSING (IN ISOPORM NNOS BETA).

TGIQUD >> MRGLGS (IN ISOPORM NNOS BETA).

MISSING (IN ISOPORM NNOS GAMMA).

MISSING (IN ISOPORM NNOS GAMMA).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -1- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN THE BRAIN AND
                                                                             NNOS-INHIBITING PROTEIN (PIN)-BINDING (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Hillier B.J., Christopherson K.S., Prehoda K.E., Bredt D.S., Lim W.A.; "Unexpected modes of PDZ domain scaffolding revealed by structure of nNOS-syntrophin complex."; science 284:812-815(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Magee T., Fuentes A.M., Garban H., Rajavashisth T., Marquez D., Rodriguez J.A., Rajfer J., Gonzalez-Cadavid N.F.; "Cloning of a novel neuronal nitric oxide synthase expressed in penis
                                                                                                                                                                                                                                                                                          -> KYPEPLRFFPRKGPSLSHVDSEAHSLVAARDSOHR
                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (NOS, TYPE I) (NEURONAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Cloned and expressed nitric oxide synthase structurally resembles cytochrome P-450 reductase.";
Nature 351:714-718(1991).
                                                                                                                                                                                                                                                                                                                                                                                                        0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bredt D.S., Hwang P.M., Glatt C.L., Lowenstein C., Reed R.R.,
                                                                                                                                                                                                                                                                                                                                                                      Score 78; DB 1; Length 1429;
Pred. No. 3.8e-05;
0; Mismatches 4; Indels
          PROSITE; PS50106; PD2; 1.
Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme; Alternative splicing; Multigene family.
                                                                                                                                                                                                                                                                                                                       3782848D65B41BFC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOSI_RAT STANDARD; PRT; 1429 AA.
P29476; P70594;
01-APR-1993 (Rel. 25, Created)
01-APR-1993 (Rel. 25, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
NITRIC-OXIDE SYNTHASE, BRAIN (EC 1.14.13.39) (NOS, TYPE NOS) (N-NOS) (NNOS) (RONSTITUTIVE NOS) (NC-NOS) (BNOS).
                                                                                                                                                                                                                                                                                                         IN ISOFORM NNOS MU)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 X-RAY CRYSTALLOGRAPHY (1.25 ANGSTROMS) OF 14-125.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                and lower urinary tract.";
Biochem. Biophys. Res. Commun. 226:145-151(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. (ISOFORM PNNOS).
STRAIN-FISCHER 344; TISSUE-Penis;
MEDLINE-96400229; Pubmed-8806605;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-99238815; PubMed-10221915;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=91287795; PubMed=1712077;
                                                                                                                                                                                                                                                                                                                                                                      Query Match 75.7%;
Best Logal Similarity 77.8%;
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1252 GIAPFRSFWQQRQFDIQH 1269
                                                                                                                                                                                                                                                                                                                          1429 AA; 160472
                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GIVPFRSFWQORLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus norvegicus (Rat).
                                                                             240
                                                                                                                                                         1038
1180
1263
1358
230
236
331
608
                                                              66
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=10116;
                                                                             163
                                                                                                                                                                                           1245
                                                                                                                                                                                                         1343
                                                                                                                                                                                                                                          231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Snyder S.H.;
                                                                                                                                                                                                                                                                         VARSPLIC
VARSPLIC
                                                                                                                                                                                                          NP_BIND
VARSPLIC
                                                                                                                                                                                                                                                                                                                          SEQUENCE
                                                                                                                           DOMAIN
NP_BIND
NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                            VARSPLIC
                                                                                                                                                                                                                                                           VARSPLIC
                                                                                                            BINDING
                                                                             DOMAIN
                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDDDTTDD
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                 THE ENTYME (BY SIMILARITY).

THE ENTYME (BY SIMILARITY).

THE ENTYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN. INHIBITED BY

N-NOS-INHIBITING PROTEIN (PIN) WHICH MAY PREVENT THE DIMERIZATION

OF THE PROTEIN (BY SIMILARITY).

-!- SUBGUNTY: HOWODIMER (BY SIMILARITY).

SUBGELLULAR LOCATION: IN SKELETAL MUSCLE FIBER BY ASSCITING

BENEATH THE DYSTROPHIN GLYCOPROTEIN COMPLEX (BY SIMILARITY).

-!- ALTERNATIVE PRODUCTS: 3 ISOFORMS; N-NOS-1 (SHOWN HERE), N-NOS-2

AND PRINGS; ARE PRODUCED BY ALTERNATIVE SPLICING.

-!- ALTERNATIVE PRODUCED BY ALTERNATIVE SPLICING.

AND PRINGS; ARE PRODUCED BY ALTERNATIVE SPLICING.

-!- SUBGULTS: 1 ISOFORM N-NOS1 IS EXPRESSED IN BRAIN. ISOFORM MUSCLE, AND COEXIGSWITH THE DESTRUCTHEN, NOS IN THE PELLY CHECKED LING.

C.-- PINNOS; BLADDER AND LIVER, AND IS DETECTABLE IN THE CEREBELLUM.

C.-- DOMAIN: THE DED DOMAIN IN THE N-TERMINAL PART OF THE NEURONAL.

ISOFORM PARTICIPATES IN PROTEIN INTERACTION, AND IS

RESPONSIBLE FOR TARGETING NNOS TO SYNAPTIC MEMBRANES IN MUSCLES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NNOS-INHIBITING PROTEIN (PIN)-BINDING (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MISSING (IN ISOFORM N-NOS-2).
K -> KYPEPLRFPRKOPSLSHVDSEAHSLVAARDSQHR (IN ISOFORM PNOS).
                                -i- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADP(+).

-i- COFACTOR: HEME. BINDS OFE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HEME (BY SIMILARITY).
CALMODULIN-BINDING (POTENTIAL).
FAM (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
MISSING (IN ISOFORM N-NOS-2).
PERIPHERAL NERVOUS SYSTEM, NO DISPLAYS MANY PROPERTIES OF A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Oxidoreductase, NADP, FAD, FWN, Calmodulin-binding, Heme, Alternative splicing; Multigene family, 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      I -> V (IN REF. 2).
P -> A (IN REF. 2).
F -> S (IN REF. 2).
A -> V (IN REF. 2).
W, 7255C5AE165200F5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                    -!- SIMILARITY: BELONGS TO THE NOS FAMILY.
-!- SIMILARITY: CONTAINS 1 PDZ/DHR DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        269 269 i ->
953 953 P ->
1008 1008 F ->
1311 1311 A ->
1429 AA; 160559 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00667; FAD_binding; 1. Pfam; PF00595; PDZ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; X59949; CAA42574.1; -. EMBL; U67309; AAC52782.1; -. PIR; S16233; S16233.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PR00369; FLAVODOXIN
PRINTS; PR00371; FPNCR.
PROSITE; PS50106; PDZ; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001094; -. InterPro; IPR001433; -. InterPro; IPR001478; -. InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR003097; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         912
1038
1180
1263
1358
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       10AU; 06-MAR-00
10AV; 06-MAR-00.
                                                                                                                                                                                                                                                                                                                                                                                                                   (BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                343
504
839
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CONFLICT
CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NP_BIND
NP_BIND
NP_BIND
VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               UP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PDB;
```

ó;

```
Wang Y., Goligorsky M.S., Lin M., Wilcox J.N., Marsden P.A.;
"A novel, testis-specific mRNA transcript encoding an NH2-terminal
truncated nitric-oxide synthase.";
J. Biol. Chem. 272:11392-114(1997).
-I- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN THE BRAIN AND
PERIPHERAL NERVOUS SYSTEM, NO DISPLAYS MANY PROPERTIES OF A
                                                                                                                                                                                                                                                                                                                                                                                                            SECUENCE FROM N.A. (ISOFORM N-NOS-1).
MEDLINE-95105197; PubMed-7528745;
Hall A.V., Antoniou H., Wang Y., Cheung A.H., Arbus A.M., Olson S.L.,
Lu W.C., Kau C.-L., Marsden P.A.;
"Structural organization of the human neuronal nitric oxide synthase
gene, (NOS1).";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-Retina;
MEDLINE-97034095; PubMed-8879752;
Park C.-S., Glanotti C., Park R., Krishna G.;
"Neuronal isoform of nitric oxide synthase is expressed at low levels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nakane M., Schmidt H.H.H.W., Pollock J.S., Foerstermann U., Murad F.; "Cloned human brain nitric oxide synthase is highly expressed in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + HITRIC OXIDE + N NADP(+).

COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                          Gaps
                                                                                                                                                                                                                              01-APR-1993 (Rel. 25, Created)
01-07T-1996 (Rel. 34, Last sequence update)
01-07T-2000 (Rel. 40, Last annotation update)
NITRIC-OXIDE SYMTHASE, BRAIN (EC 1.14.13.39) (NOS, TYPE I) (NEURONAL NOS) (N-NOS) (NNOS) (CONSTITUTIVE NOS) (NC-NOS) (BNOS).
                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A. (ISOFORMS TN-NOS; TN-NOSB AND TEX2 INSERTION)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             "Expression of two types of nitric oxide synthase mRNA in human neuroblastoma cell lines."; J. Neurochem. 63:140-145(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Cerebellum;
MEDLINE-94267447; PubMed-7515942;
Fujisawa H., Ogura T., Kurashima Y., Yokoyama T., Yamashita J.,
                                        ;
0
 Score 78; DB 1; Length 1429;
Pred. No. 3.8e-05;
0; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A. (ISOFORMS N-NOS-1 AND N-NOS-2).
                                                                                                                                                                                                  PRT; 1434 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    in human retina.";
Cell. Mol. Neurobiol. 16:499-515(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      J. Blol. Chem. 269:33082-33090(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. (ISOFORM N-NOS-1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. (ISOFORM N-NOS-1).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Brain;
MEDLINE-93131039; PubMed-7678401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MEDLINE-97269048; PubMed-9111048;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FEBS Lett. 316:175-180(1993).
 75.7%;
77.8%;
                                                                                            1 GIVPFRSFWQQRLHDSQH 18
                                     14; Conservative
                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                         Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NEUROTRANSMITTER
Query Match
Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            skeletal muscle.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Testis,
                                                                                                                                                                                              NOS1_HUMAN
P29475;
                                                                                                                                                           RESULT 11
                                                                                                         a
                                                                                                                                                                                                ò
```

JOINED. JOINED.

JOINED.

AAB60654.1

AAB60654.1

U17303; AAB60654

EMBL; EMBL;

EMBL;

EMBL; EMBL; EMBL; EMBL;

JOINED. JOINED JOINED

JOINED.

U17300; AAB60654.1 U17301; AAB60654.1

EMBL; EMBL;

EMBL;

EMBL; U17327; AAA62405.1;

JOINED.

AAB60654.1

AAB60654.1 AAB60654.1

AAB60654.1 AAB60654

JOINED

U17313;

EMBL;

EMBL; EMBL;

EMBL; EMBL;

JOINED. JOINED. JOINED.

AAB60654.1; AAB60654.1;

AAB60654.1

EMBL; EMBL;

EMBL; EMBL;

AAB60654.1

JOINED. JOINED. JOINED.

AAB60654

JOINED.

AAB60654.1;

AAB60654.1;

-; NOT_ANNOTATED_CDS

PIR; \$28878; \$28878 HSSP; P00388; 1AMO.

THE ENZYME,

L02881; AAA36376.1; U31466; AAB49040.1;

BAA03895

D16408

EMBL;

EMBL;

EMBL;

```
THE SANCOLEMBE OF FASTITMITCH MUSCLE FIBER BY ASSOCIATING WITH THE DYSTROPHIN GIRCOPROTEIN COMPLEX.

1. ALTERNATIVE PRODUCTS: 4 ISOFORMS; N-NOS-1 (SHOWN HERE), N-NOS-2, TN-NOS/TN-NOSB AND TEXZ INSERTION; ARE PRODUCED BY ALTERNATIVE SPLICING. TN-NOS/TN-NOSB AND TEXE PRODUCED BY ALTERNATIVE SPLICING. TN-NOS/TN-NOSB LEADING TO A NH2-TRUNCATED EXONS TEXI (TN-NOS) OR TEXT EXD (TN-NOS) LEADING TO A NH2-TRUNCATED PROTEIN WHICH POSSESSES ENXYMATIC ACTIVITY COMPARABLE TO THAT OF N-NOS-1. THE COOH-TRUNCATED TEXZ INSERTION ISOFORM IS PRODUCED BY INSERTION OF THE TEXZ EXON BETWEEN EXONS 3 AND 4 OF THE N-NOS-1 ISOFORM, LEADING TO A FRAMESHIFT AND A PREMATURE STOP CODON.

1. TISSUE SPECIFICITY: THE N-NOS-1 ISOFORM IS UBIQUITOUSLY EXPRESSED: DEFECTED IN SKELFALM MUSCLE AND BRAIN, ALSO IN TESTIS, LUNG AND KIDNEY, AND AT LOW LEVELS IN HEART, ADREAD CHAND AND RETINA. NOT DETECTED IN THE PLATELETS. THE TN-NOS ISOFORM IS DETECTED ONLY IN THE TESTIS. THE TN-NOS ISOFORM IS DETECTED ONLY IN THE TESTIS. THE TN-NOS ISOFORM IS DETECTED IN THE BRAIN BUT NOT IN THE HEBRY AND ADDREAD GLAND.

1. DOMAIN: THE PDZ DOMAIN IN THE N-TERMINAL PART OF THE NEURONAL ISOFORM PARTICIPATES.

1. SOFORM PARTICIPATES IN PROTEIN-PROTEIN INTERACTION, AND IS EXPRESSED.

1. SOFORM PARTICIPATES IN PROTEIN-PROTEIN INTERACTION, AND IS EXPRESSED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                     SUBUNIT: HOMODIMER.
SUBCELLULAR LOCATION: IN SKELETAL MUSCLE, IT IS LOCALIZED BENEATH
THE SARCOLEMMA OF FAST-TWITCH MUSCLE FIBER BY ASSOCIATING WITH THE
ENZYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN. INHIBITED BY N-NOS-INHIBITING PROTEIN (PIN) WHICH MAY PREVENT THE DIMERIZATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY: BELONGS TO THE NOS FAMILY. SIMILARITY: CONTAINS 1 PDZ/DHR DOMAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (BY SIMILARITY
                                       OF THE PROTEIN
                                                       <del>-</del> +
                                                                                                                                       <u>-</u>
```

11

```
DOMAIN
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NP_BIND
   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -> MRKLRITEGFGVQRGSHNHPPPQENSPPQRMAAPPSVH
ASSRSRTGRLRWFSLTPSTLRAHWKRDALSTSAWAPSCILL
SWQGGLKTSAQKDSSSLSPKSLLINTIHQLKDLAPKPTWKG
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PPTSGKQSPTKNGSPSKCPRFLKVKNWETEVVLTDTLHLKS
TLETGCTEYICMGSIMHPSQHARRPEDVRTKGQLFPLAKEF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         IDQYYSSIKRFGSKAHMERLEEVNKEIDTTSTYQLKDTELI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SECUENCE FROM N.A.
MEDLINE-96216113; PubMed-8662618;
Lin A.W., Chang C.C., McCormick C.C.;
"Molecular cloning and expression of an avian macrophage nitric-oxide synthase cDNA and the analysis of the genomic 5'-flanking region.";
J. Biol. Chem. 271:11911-11919(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CALMOUGLIN BINDING (POPENTIAL).
FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (PLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (AND PART) (BY SIMILARITY).
MISSING (IN ISOFORM TN-NOS/TN-NOSB).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NNOS-INHIBITING PROTEIN (PIN)-BINDING,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WKR (IN ISOFORM TEX2 INSERTION).
MISSING (IN ISOFORM TEX2 INSERTION).
MISSING (IN ISOFORM N-NOS-2).
K -> E (IN REF. 4).
LAPRPPG -> WPQAPR (IN REF. 3 AND 4).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NOS2_CHICK STANDARD, PRT; 1136 AA.
090703; 090677; 090934;
01.NOV-1997 (Rel. 35, Created)
01.NOV-1997 (Rel. 35, Last sequence update)
30-NAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
(INDUCIBLE NOS) (INOS) (MACROPHAGE NOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                              PRINTS; PRO0369; ELAVODOXIN.

PRINTS; PR00371; FDNCR.

PRO15TE; PS00106; PDZ; 1.

PRO16TE; PS00106; PDZ; 1.

MALEGRATIC SP10106; MULIGERE family.

MALEGRATIC SP10106; MULIC SP10106; MULIGERE FAMILY.

MALEGRATIC SP10106; MULIC SP10106; MULIGERE FAMILY.

MALEGRATIC SP10106; MULIC SP10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1434;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   99235793B953BF37 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             QP -> HR (IN REF. 3).
V -> L (IN REF. 3).
G -> A (IN REF. 3).
Y -> I (IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 78; DB 1; Pred. No. 3.9e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                     InterPro; IPR001094; ...
InterPro; IPR001433; ...
InterPro; IPR001478; ...
InterPro; IPR001709; ...
InterPro; IPR003097; ...
Pfam; PF00657; RAL_binding; 1...
Pfam; PF0055; PDZ; 1...
Pfam; PF00175; oxidored_fad; 1...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75.7%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              160970
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 75.7
Best Local Similarity 77.8
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gallus gallus (Chicken).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1043
11185
1268
1363
336
407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              613
131
184
493
549
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1407
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ą,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID=9031;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NP_BIND
VARSPLIC
VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARSPLIC
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VARSPLIC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gallus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NOS2_CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A PAR LA 
NAME OF THE PETET OF THE PETET
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      in chick embryonic ventricular myocytes.";
Cardiovasc. Res. 38.405-413(1988).
-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. NO MAY SERVE AS BOTH A
PARACRINE AND AUTOCRINE SIGNAL FOR MODULATING OSTEOCLAST BONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -:-CATALTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) - CITRULLINE + NITRIC OXIDE + N NADP(+).

-:-COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE ENZYME (BY SIMILARITY).

-:-ENZYME (BY SIMILARITY).

-:-SUBUNIT: HOMODIMER (BY SIMILARITY).

-:-CUBUCTION: BY TREATMENT WITH LIPOPOLYSACCHARIDES (LPS) OR CYTOKINES, BUT NOT IN OSTBOCLASTS WHERE THEY ARE INDUCED BY CALCIUM AND PMA (PHORBOL 12-MYRISTATE 13-ACETATE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HEME (BY SIMILARITY).
CALMODULIN BINDING (POTENTIAL).
FAM (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
ZINC (BY SIMILARITY).
                                                          TISSUE-Osteoclast;
MEDLINE-96252270; PubMed-8707887;
Sunyer T., Rothe L., Jiang X., Osdoby P., Collin-Osdoby P.;
WProinflammatory agents, LL-8 and IL-10, upregulate inducible nitric oxide synthase expression and nitric oxide production in avian
                                                                                                                                                                                                                                                                                                                                                                                                                       Shinizu T., Kinugawa K., Sugishita Y., Sugishita K., Harada K.,
Matsui H., Kohmoto O., Serizawa T., Takahashi T.;
"Molecular cloning and expression of inducible nitric oxide synthase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme; Zinc;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1: Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S -> T (IN REF. 2).
R -> S (IN REF. 3).
MW; D5CB73AC7BA94B9D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         73.8%; Score 76; DB 1; I
86.7%; Pred. No. 6.5e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1; Mismatches
                                                                                                                                                                                                                                                             J. Cell. Biochem. 60:469-483(1996).
                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE=98375063; PubMed=9709401;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR003097; -.
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 646-986 FROM N.A.
[2]
SEQUENCE OF 171-472 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; U46504; AAC59886.1; -. EMBL; U34045; AAB17499.1; -. EMBL; D85422; BAA12817.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         129649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 86....
Local 13; Conservative
                                                                                                                                                                                                                              osteoclast-like cells."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001094; -. InterPro; IPR001433; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001709; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; P00388; 1AMO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESORPTION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Metal-binding
                                                                                                                                                                                                                                                                                                                                                                   TISSUE-Heart;
```

```
EMBL;
NOS3_HUMAN STANDARD; PRT; 1202 AA.
P29474; Q14251; Q14434; Q13662;
01-APR-1993 (Rel. 25, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC-OXIDE SYNTHASE, ENDOTHELIAL (EC 1.14.13.39) (EC-NOS) (NOS, TYPE III) (NOSIII) (ENDOTHELIAL NOS) (ENOS) (CONSTITUTIVE NOS) (CNOS).
                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE-92340475; PubMed-1378832;
Janssens S.P., Shimouchi A., Quertermous T., Bloch D.B., Bloch K.D.;
"Cloning and expression of a cDNA encoding human endothellum-derived relaxing factor/nitric oxide synthase.";
J. Biol. Chem. 267:14519-14522(1992).
                                                                                                                                                                                                                                                                                                                          Bloch K.D.;
                                                                                                                                                                                                                                                                                                                                                                               Marsden P.A., Schappert K.T., Chen H.S., Flowers M., Sundell C.L., Wilcox J.N., Lamas S., Michel T.; "Molecular cloning and characterization of human endothelial nitric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.

MADLINE-93352539; PubMed-7688726;
MARSDEN P.A., Heng H.H., Scherer S.W., Stewart R.J., Hall A.V.,
Shi X.M., Tsui L.C., Schappert K.T.;
Structure and chromosomal localization of the human constitutive
endothelial nitric oxide synthase gene.";
J. Biol. Chem. 268:17478-17488(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-9433373; PubMed=7519987; Miyahara K., Kawamoto T., Sase K., Yui Y., Toda K., Yang L.X., Miyahara R., Kawamoto T., Sase K., Doi Y., Ogoshi S., Hattori R., Aoyama T., Yamamoto Y., Doi Y., Ogoshi S., Hashimoto K., Kawai C., Sasayama S., Shizuta Y.; "Cloning and structural characterization of the human endothelial
                                                                                                                                                                                      Eukaryota, Metazoa, Chordata, Cranlata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo.
                                                                                                                                                                                                                                                                                                                         Biol. Chem. 267:22694-22694(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Liao J.K.;
Submitted (DEC-1993) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nadaud S.A., Bonnardeaux A., Lathrop M., Soubrier F.; "Gene structure, polymorphism and mapping of the human nitric oxide synthase gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochem. Biophys. Res. Commun. 198:1027-1033(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nitric-oxide-synthase gene.";
Eur. J. Biochem. 223:719-726(1994).
                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-92354731; Pubmed-1379542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE-94161710; Pubmed-7509596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 1-52 FROM N.A.
TISSUE-Placenta;
MEDLINE-94245207; Pubmed-7514568;
                                                                                                                                                                                                                                                                                                                                                                                                                            FEBS Lett. 307:287-293(1992).
                      1 GIVPFRSFWQQRLHD 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
TISSUE=Umbilical vein;
                                                                                                                                                                             Homo saptens (Human)
                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                  oxide synthase."
                                                                                                                                                                                                            NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-Placenta;
                                                                                                                                                                                                                                                                                                                          Janssens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Liao J.K
                                                                                                                                                                                                                                                                                                               ERRATUM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
         à
                              g
```

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                      MEDLINE-96077182; PubMed-7475956;
Sase K., Michel T.;
"Expression of constitutive endothelial nitric oxide synthase in human
blood platelets.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "A missense Glu298Asp variant in the endothelial nitric oxide synthase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -1- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) ~ CITRULLINE + N NTRIC OXIDE + N NADP(+).

-1- COFACTOR: HEME. BINDS OWE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILLIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     VASCULAR SMOOTH MUSCLE RELAXATION THROUGH A CGMP-MEDIATED SIGNAL TRANSPUCTION PATHWAY. NO MEDIATES VASCULAR ENDOTHELIAL GROWTH FACTOR (VECF)-INDUCED ANGIOGENESIS IN CORONARY VESSELS AND PROMOTES BLOOD CLOTTING THROUGH THE ACTIVATION OF PLATELETS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE CONTROL PLUMED 9737779;
YOShimura M., Yasue H., Nakayama M., Shimasaki Y., Sumida H.,
Sugiyama S., Kugiyama K., Ogawa H., Ogawa Y., Saito Y., Miyamoto Y.,
                                                                                                                                                                                                                                                                                                                                                                                          X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS).

BUDILNE-99173237, PubMed-in0074942;

Fischmann T.O., Hruza A., Niu X.D., Fossetta J.D., Lunn C.A.,

Dolphin E., Prongay A.J., Reichert P., Lundell D.J., Narula S.K.,
Robinson L.J., Weremowicz S., Morton C.C., Michel T.; "Isolation and chromosomal localization of the human endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS IMPLICATED IN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "Structural characterization of nitric oxide synthase isoforms reveals striking active-site conservation."; Nat. Struct. Biol. 6:233-242(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THE ENZYME.
--- ENZYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN.
--- SUBUNTT: HOMODIMER.
--- TISSUE SPECIFICITY: PLATELETS.
---- DISEASE: DEFECTS IN NOS3 ARE INVOLVED IN CORONARY SPASM.
--- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                gene is associated with coronary spasm in the Japanese."; Hum. Genet. 103:65-69(1998).
                                                     nitric oxide synthase (NOS3) gene."
Genomics 19:350-357(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COLNED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   VARIANT CORONARY SPASM ASP-297
                                                                                                                                             SEQUENCE OF 410-527 FROM N.A.
                                                                                                                                                                                                                                                                                                                              Life Sci. 57:2049-2055(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; M93718; AAA36364.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       L10709; AAA36365.1;
L10693; AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L10694; AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           L10697; AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAA36365
                                                                                                                                                                                TISSUE-Platelet;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 M95296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L10695;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L10701;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          L10700;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      L10702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          L10707
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nakao K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
```

JOINED

AAA36365.1;

L10708;

```
taurus (Bovine).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       THE ENZYME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PALMITOYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             targeting."
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation update)
, ENDOTHELIAL (EC 1.14.13.39) (EC-NOS) (NOS, TYPE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CALMOULIN-BINDING (POTENTIAL).
FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
MYRISTATE (BY SIMILARITY).
PALMITATE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Myristate;
Lipoprotein; Palmitate; Disease mutation; Calcium-binding; Heme;
Zinc; Metal-binding; Multigene family; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1; Length 1202;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               • E (IN REF. 6).
93D127D6C14AC92E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 D (IN CORONARY SPASM)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ZINC.
E -> D (IN CORONARY S:
   /FIG=VAR_008037.
S -> R (IN REF. 8).
G -> S (IN REF. 9).
V -> W (IN REF. 7).
R -> RQ (IN REF. 7).
D -> E (IN REF. 6).
7 MW; 93D127D6C14AC92E (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HEME (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 75; DB 1;
Pred. No. 0.0001;
1; Mismatches 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT; 1204 AA.
                                                                                 JOINED.
JOINED.
JOINED.
                                                                                                                                             JOINED.
JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZINC
                                                                                                                                                                                                                                   JOINED.
JOINED.
JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3_BOVIN SIGN...
NOS3_BOVIN SIGN...
101-80473; (Rel. 25, Created)
101-801-1993 (Rel. 26, Last sequer 01-701-1993 (Rel. 39, Last annot we-2000 (Rel. 39, Last annot we-2000 (Rel. 39, East annot we-2000 (Rel. 39, Last annot
                                                                                                                                                                                                                   JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
PRIWES; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     72.8%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AA; 133157
                                    CAA53950.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PIR; S24052; S24052.
PIR; A42867; A42867.
PDB; 3NOS; 04-FEB-00.
MIM; 163729; InterPro; IPR001094; -.
InterPro; IPR001433; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 72.8
Best Local Similarity 80.0
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR001709; -. InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GIVPFRSFWQQRLHD 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        944
1027
1122
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         183
                                                                                                   X76307;
X76308;
X76309;
X76310;
                                        X76304;
X76305;
X76306;
                                                                                                                                                                                                                                     X76313;
X76314;
                                                                                                                                                                                          x76311;
x76312;
                                                                                                                                                                                                                                                                                                  X76316;
D26607;
                                                                                                                                                                                                                                                                                                                                               L23210;
                                                                                                                                                                                                                                                                                                                                                                 $80791;
                                                                                                                                                                                                                                                                                  X76315;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               METAL
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NP_BIND
                                                               EMBL;
EMBL;
                                                                                                       EMBL;
                                                                                                                                                                                          EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                  EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LIPID
                                          EMBL;
                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                       EMBL;
                                                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIPID
                                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOS3_BOVIN
                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STATE
DORANA DO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation for European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
TISSUE-AOTLIC endothelium;
MEDLINE-92348367; PubMed=1379225;
Sessa W.C., Harrison J.K., Barber C.M., Zeng D., Durieux M.E.,
D'Angelo D.D., Lynch K.R., Peach M.J.;
"Molecular cloning and expression of a cDNA encoding endothelial cell
nitric oxide synthase.";
J. Blol. Chem. 267:15274-15276(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NITRIC OXIDE + N NADP(+).
-!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAX STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ACTION OF THE MACKET AND ANGSTROMS) OF 66-481.
MEDLINE-99091052; PubMed-9875848;
Raman C.S., Li H., Martasek P., Kral V., Masters B.S., Poulos T.L.;
"Crystal structure of constitutive endothelial nitric oxide synthase: a paradigm for pterin function involving a novel metal center.";
Cell 95:939-950(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VASCULAR SMOOTH MUSCLE RELAXATION THROUGH A CGMP-MEDIATED SIGNAL TRANSDUCTION PATHWAY. NO MEDIATES VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF)-INDUCED ANGIOGENESIS IN CORONARY VESELS AND PROMOTES BLOOD CLOTTING THROUGH THE ACTIVATION OF PLATELETS. CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Robinson L.J., Michel T.; "Mutagenesis of palmitoylation sites in endothelial nitric oxide synthase identifies a novel motif for dual acylation and subcellular
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MISDLINE-99055452;

Nishida F., Harrison D.G., Navas J.P., Fisher A.A., Dockery S.P.,

Uematsu M., Nerem R.M., Alexander R.W., Murphy T.J.;

Mindlecular cloning and characterization of the constitutive bovine

aortic endothalial cell nitric oxide synthase.";

J. Clin. Invest. 90:2092-2096(1992).
                                                                                                                                                      Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea; Boyinae; Bos. NCBL_TaxID-9913;
III) (NOSIII) (ENDOTHELIAL NOS) (ENOS) (CONSTITUTIVE NOS) (CNOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .i. FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS IMPLICATED IN
                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
MEDLINE=92335295; PubMed=1378626;
Lamas S., Marsden P.A., Li G.K., Tempst P., Michel T.;
Lamas S., Marsden P.A., Li G.K., Tempst P., Michel T.;
Endothelial nitric oxide synthase: molecular cloning and characterization of a distinct constitutive enzyme isoform.";
Proc. Natl. Acad. Sci. U.S.A. 89:6348-6352(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Busconi L., Michel T.;
"Endothelial nitric oxide synthase. N-terminal myristoylation
determines subcollular localization.";
J. Biol. Chem. 268:8410-8413(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ENZYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN. SUBUNIT: HOMODIMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Proc. Natl. Acad. Sci. U.S.A. 92:11776-11780(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MYRISTOYLATION.
MEDLINE-93231982; PubMed-7682550;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=96102197; PubMed=8524847;
```

```
INIT_MET
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NP_BIND
NP_BIND
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          LIPID
   RRARA 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NOS3_PIG STANDARD; PRT; 1204 AA.
0289667
30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC-OXIDE SYMTHASE, ENDOTHELIAL (EC 1.14.13.39) (EC-NOS) (NOS, TYPE III) (NOSIII) (ENDOTHELIAL NOS) (ENOS) (CONSTITUTIVE NOS) (CNOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                        HEME (BY SIMILARITY).
CALMODULIN-BINDING (POTENTIAL).
FEM (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sus scrofa (P1g).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Cetartiodactyla, Suina, Suidae, Sus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 REF.
                                                                                                                                                                                                                                                                                                  Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Myristate; Lipoprotein; Palmitate; Phosphorylation; Calcium-binding; Heme; Zinc; Metal-binding; Multigene family; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PHOSPHORYLATION (BY CAPK).

C -> R (IN REF. 3).

Y -> I (IN REF. 3).

EHPTLEWFAAL -> GAPHTGVVRGP (IN RE S -> Y (IN REF. 3).

T -> P (IN REF. 3).

T -> A (IN REF. 3).

CP -> SA (IN REF. 3).

CP -> A (IN REF. 3).

L -> V (IN REF. 3).

L -> V (IN REF. 3).

L -> V (IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 75; DB 1; Length 1204; Pred. No. 0.0001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   -> LV (IN REF. 3).
> H (IN REF. 3).
D017210062ABE4B0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A., AND CHARACTERIZATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MYRISTATE.
PALMITATE.
PALMITATE.
 ch)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ξ.
or send an email to license@isb-sib,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZINC
                                                                               PDB: 1NSE: 18-MXY-99.
PDB: 2NSE: 25-MXY-99.
PDB: 3NSE: 18-MXY-99.
PDB: 4NSE: 18-MXY-99.
INTERPO: IPR001094; -.
INTERPO: IPR001094; -.
INTERPO: IPR0011094; -.
INTERPO: IPR001709; -.
INTERPO: IPR001709; -.
Pfam: PF00175; -.
Pfam: PF00175; -.
Pfam: PR00175; -.
PRINTS; PR00359; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                               EMBL; M99057; AAA30667.1; -. EMBL; M89952; AAA30494.1; -. EMBL; M95674; AAA30669.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72.8%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          133155
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1018 GIAPFRGFWOERLHD 1032
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match 72.8
Best Local Similarity 80.0
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GIVPFRSFWQQRLHD 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TISSUE-Pulmonary artery;
                                                                                                                                                                                                                                                                                                                                                                          185
511
681
805
946
1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     856
906
1041
1204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=9823;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                          INIT_MET
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
NP_BIND
NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NP_BIND
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOD RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 1:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ő
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
MEDLINE-97293429; PubMed-9149402; Zhang J., Patel J.M., Block E.R.; Zhang J., Patel J.M., Block E.R.; Molecular cloning, characterization and expression of a nitric oxide synthase from porcine pulmonary artery endothelial cells."; Comp. Blochem. Physiol. 1168:485-491(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY).

-!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) - CITRULLINE + N NTRIC OXIDE + N NADP(+).

-!- COFACTOR: HEME. BINDS ONE EACH OF FAD AND FWN. ALSO REQUIRES TETRAHYDROBIOPPERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE ENZYME (BY SIMILARITY).

-!- ENZYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HEME (BY SIMILARITY).

CALMODULIN BINDING (POTENTIAL).

FAN (PYRINDINE PART) (BY SIMILARITY).

FAD (FLAVIN PART) (BY SIMILARITY).

FAD (FLAVIN PART) (BY SIMILARITY).

NADP (ADP PART) (BY SIMILARITY).

MYRIGTATE (BY SIMILARITY).

PALMITATE (BY SIMILARITY).

PALMITATE (BY SIMILARITY).

ZINC (BY SIMILARITY).

ZINC (BY SIMILARITY).
                                                                                                                                                                                                                        Patel J.M., Block E.R.;
Submitted (AUG-1995) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS INPLICATED IN
VASCULAR SMOOTH MUSCLE RELAXATION THROUGH A CGMP-MEDIATED SIGNAL
TRANSDUCTION PATHMAY. NO MEDIATES VASCULAR ENDOTHELIAL GROWTH
FACTOR (VEGF)-INDUCED ANGIOGENESIS IN CORONARY VESSELS AND
PROMOTES BLOOD CLOTTING THROUGH THE ACTIVATION OF PLATELETS (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Myristate;
Lipoprotein; Palmitate; Calcium-binding; Heme; Zinc; Metal-binding;
Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 75; DB 1; Length 1204;
Pred. No. 0.0001;
.; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   48676BA95D814CFE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SIMILARITY).
-- SUBUNIT: HOMODIMER (BY SIMILARITY).
-- INDUCTION: REPRESSED BY PROINFLAMMATORY CYTOKINES.
-- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BY SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL, U59924; AAB39539.1; --
EMBL, U3382; AAA84933.1; --
HSSP; P29477; 2NOS.
InterPro; IPR001094; --
InterPro; IPR0011094; --
InterPro; IPR0011709; --
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; --
Pfam; PR00159; --
Pfam; PR00159; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                  [2] SEQUENCE OF 1031-1205 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            72.8%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133274
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GIVPFRSFWQQRLHD 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             185
511
681
805
946
1029
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1204 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity
Matches 12; Conser'
```

Search completed: September 10, 2001, 14:09:51 Job time: 560 sec

This Page Ciam (Japto)

```
September 10, 2001, 13:57:41; Search time 42.28 Seconds (without alignments) 32.430 Million cell updates/sec
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                           OM protein - protein search, using sw model
                                                                                                                                                               Run on:
```

US-08-833-506C-25 103 1 GIVPFRSFWQQRLHDSQH 18 BLOSUM62 Gapop 10.0 , Gapext 0.5 Title: Perfect score: Scoring table: Sequence:

Total number of hits satisfying chosen parameters: 219241 seqs, 76174552 residues Searched:

219241

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

pirl:* pir2:* pir3:* pir4:* PIR_68:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES æ

	Description	nitric-oxide synth	nitric-oxide synth	nitric-oxide synth			nitric-oxide synth		nitric-oxide synth	nitric-oxide synth		nitric-oxide synth	nitric-oxide synth						nitric-oxide synth					oxide	sulfite reductase	sulfite reductase	sulfite reductase	hypothetical prote	ferredoxinNADP+	ferredoxinNADP+
SUMMAKIES	ΩI	A43271	S47647	156575	S38253	JC5027	JC5028	JC5029	S65440	A49676	153165	139204	146074	JN0609	S16233	G01946	A47501	A38943	S71424	T31080	I51917	T31331	T30555	T13254	F84979	A34231	50	592	S72222	
	DB	-	П	7	-	~	7	7	7	~	-	7	7	7	~	7	٦	Н	ď	~	~	7	7	7	7	Н	Н	C)	N	7
	Length	1144	1147	1147	1147	1147	1147	1147	1147	1153	1147	69	136	1429	1429	1433	1203	1205	1202	1153	63	1247	1206	1350	601	599	599	599	346	354
de	Query Match	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	96.1	88.3	83.5	76.7	75.7	75.7	75.7	72.8	72.8	70.9	67.0	61.2	55.3	54.4	54.4	51.5	50.5	50.5	50.5	49.5	49.5
	Score	66	66	66	66	66	66	66	66	66	91	98	79	78	78	78	75	75	73	69	63	57	99	26	53	52	52	52	51	51
	Result No.	1	7	m	7	S	ø	7	ω.	თ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	36	27	28	29

hypothetical prote sulfite reductase	sulfite reductase	sulfite reductase NADPHferrihemopr	NADPH ferrihemopr	NADPH ferrihemopr	probable oxidoredu	NADPH ferrihemopr	probable sulfite r	sulfite reductase	NADPHferrihemopr	NADPH ferrihemopr	NADPHferrihemopr	NADPH-cytochrome P	NADPHferrihemopr
C83919 G70040	AB3726	B82329 T14904	T10723	S37156	T50103	S37157	E81905	н81110	S37159	T14081	S21531	JE0230	S31502
7	~	0 0	7	~	~	7	7	~	~	7	~	~	7
267	607	614 699	705	206	583	230	604	604	692	711	712	713	714
47.6	46.6	45.6 45.6	45.6	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7	44.7
4 4 8 8	48	47	47	46	46	46	46	46	46	46	46	46	46
						38		40	41				

ALIGNMENTS

	RESULT 1 A43271 nitric-oxide synthase (EC 1.14.13.39), calmodulin-independent - mouse
	C;Species: Mus musculus (nouse) C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 03-Mar-2000 C:Brossion: A3231, A43166, TANAES, A4618
	C,ACCESSION: A425/1; A42100; JN0430; A40100 RXIE, Q.; Cho, H.J.; Calaycay, J.; Mumford, R.A.; Swiderek, K.M.; Lee, T.D.; Ding, A Science 256, 225-228, 1902
	A;Title: Cloning and characterization of inducible nitric oxide synthase from mouse m A;Reference number: A43271; MUID:92229444
	A; Accession: A43271 A; Status: preliminary
	A;Molecule type: mRNA A:Residues: 1-1144 <xie></xie>
	A; Cross-references: GB: M87039; NID: 9198406; PIDN: AAA39315.1; PID: 9198407
	Kilyons, C.K.; Offolf, G.J.; Cunningnam, J.M. J. Biol. Chem. 267, 6370-6374, 1992
	A;Title: Molecular cloning and functional expression of an inducible nitric oxide syn A:Reference number: A42166: MUID:92210618
	A; Accession: A42166
	A;Status: preliminary A:Molecule type: mRNA
	A; Residues: 1-1144 < LYO
	A; Cross-references: GB: M84373; NID: 9200095; PIDN: AAA39834.1; PID: 9200096
	. Kiwood, E.K.; Berger Ur., H.; Snezman, P.A.; Laberina, E.G. Riochem Bionhye Res Commun 191 767-774 1993
	Hepatocytes and macrophages express
	A;Reference number: JNO457; MUID:93221515 A:Arcessinn: JNN458
	A; Status: nucleic acid sequence not shown
	A; Molecule type: mRNA A: Deciding: 1-378 (F) 380-582 (W) 687-037 030-1144 (WOO)
	A. Experimental source: liver
	R;Lowenstein, C.J.; Glatt, C.S.; Bredt, D.S.; Snyder, S.H.
	Proc. Natl. Acad. Sci. U.S.A. 89, 6711-6715, 1992
-	A, Reference number: A46186; MUID:92357701
	A:Accession: A46186
	A;Status: preliminary; not compared with conceptual translation A:Molecule type: mRNA
	A; Residues: 1-190,'V',192-765,'P',767-843,'G',845-1144 <low></low>
	A;Cross_references: GB: M92649; NID: 9200109
	A: Experimental source: Balb/c, raw Zot, cells, macrophage A: Note: sequence extracted from NCBI backbone (NCBIP:113541)
	C;Genetics:
	A; Gene: NOS
	C) Function: A: Description: catalyzes the oxidation of an L-arginine guaniding nitrogen and of NAD
	errihemoprotein
	C;Keywords: calmodulin binding; chromoporteein; FAD; flavoprotein; FNN; heme; iron; me
_	F:535-671/Domain: flavodoxin homology <flx></flx>

Wed Sep

ò g

~

Page

ö

```
A. Experimental source: liver
R. Wood, E. R.; Barger Jr., H.; Sherman, P.A.; Lapetina, E.G.
B. Wood, E. R.; Barger Jr., H.; Sherman, P.A.; Lapetina, E.G.
Blochem. Blophys. Res. Commun. 191, 767-774, 1993
A. Title: Hepatocytes and macrophages express an identical cytokine inducible nitric of A; Reference number: JN0457; MUID:93221515
A; Accession: JN0457
A; Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C. Accession: JC5027
B.Tsutsumishita, Y.; Kawai, Y.; Takahara, H.; Onda, T.; Miyoshi, J.; Futaki, S.; Niwa Biol. Pharm. Bull. 19, 1374-1376, 1996
A.Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, an A; Reference number: JC5027; MUID: 97070590
A.Status: nucleic acid sequence not shown A; Accession: JC5027
A.Status: nucleic acid sequence not shown A; Molecule type: mRNA
A; Residues: 1-1147 <TSU>
A; Residues: 1-1147 <TSU>
A; Residues: 1-1147 <TSU>
A; Commodula source: kidney
C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reC; Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FNN; heme; Iron; me
                                                                                                                                                                                                                                                                                                                                                                                               nitric-oxide synthase (EC 1.14.13.39) - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 16-Jun-2000
C;Accession: S38253, 370457
R;Adachi, H.; Iida, S.; Oguchi, S.; Ohshima, H.; Suzuki, H.; Nagasaki, K.; Kawasaki,
Eur. J. Blochem. 217, 37-43, 1993
A;Title: Molecular cloning of a cDNA encoding an inducible calmodulin-dependent nitri
A;Reference number: S38253, MUID:94039059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Description: catalyzes the oxidation of an L-arginine guanidino nitrogen and of NAD C; Superfamily: nitric-oxide syrchase; flavodoxin homology; NADPH--ferrihemoprotein re C; Keywords: calmodulin binding; chromoprotein; Fab; flavoprotein; FWN; heme; iron; me F; 536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Wolecule type: mRNA
A;Residues: 1.41,'SS',44-103,105-190,'Q',192-213,'R',215-247,'T',249-263,'I',265-373,
'S',896-1000,'LG',1003-1015,'RR',1018-1026,'EQ',1029-1147 <WOO>
A;Cross-references: PIDN:AAB26037.1
A;Experimental source: liver
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            #text_change 20-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Molecule type: mRNA
A;Residues: 1-1147 <ADA>
A;Cross-references: GB:D12520; NID:9391858; PIDN:BAA02090.1; PID:9391859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   F;538-674/Domain: flavodoxin homology <FLX>F:197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1147;
                                     Length 1147;
Score 99; DB 1; Ler
Pred. No. 8.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 99; DB 1; Le
Pred. No. 8.2e-08;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nitric-oxide synthase (EC 1.14.13.39) K - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 21-Jan-1997 #sequence_revision 21-Jan-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     °,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96.1%;
94.4%;
                                 96.1%;
94.4%;
                                                                                                                                                                                                                      1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GIVPFRSFWQQRLHDSQH 18
                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
'-haq 17; Conserve
                                                                   Similarity
                                                                   Best Local Simi
Matches 17;
                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ഗ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                            ð
                                                                                                                                                                                                                                            Dp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 2
347647

nitric-oxide synthase (EC 1.14.13.39) - rat
C.Species: Rattus norvegicus (Norway rat)
C.Species: Rattus norvegicus (Norway rat)
C.Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 16-Jun-2000
C.Accession: 847647; JC1472

R.Geng, Y.: Almqvist, M.: Hansson, G.K.
Blochim Biophys. Acta 1218, 421-424, 1994
A.Title: CDNA cloning and expression of inducible nitric oxide synthase from rat vascula
A.Reference number: 847647; MUID: 94323551
A.Molecule type: mRNA
A.Residues: 1-1147 <GEN
A.Molecule type: mNN
A.Residues: 1-17, Y., 73-347, PVV, 350-678, VPV, 681-720, 'L', 722-739, 'L', 741-843, 'G', 845-1C
A.Accession: JC1472
A.Molecule type: DNA
A.Residues: 1-71, YY, 73-347, 'PVV, 350-678, 'VPV, 681-720, 'L', 722-739, 'L', 741-843, 'G', 845-1C
A.Cross-references: DNA
A.Residues: 1-71, YY, 73-347, 'PVV, 350-678, 'VPV, 681-720, 'L', 722-739, 'L', 741-843, 'G', 845-1C
A.Cross-references: DNA
A.Residues: 1-71, YY, 73-347, 'PVV, 350-678, 'VPV, 681-720, 'L', 722-739, 'L', 741-843, 'G', 845-1C
A.Cross-references: DNA
A.Residues: 1-71, YY, 73-347, 'PVV, 350-678, 'VPV, 681-720, 'L', 722-739, 'L', 741-843, 'G', 845-1C
A.Cross-references: DNA
A.Residues: 1-71, YY, 73-347, 'PVV, 350-678, 'VPV, 681-720, 'L', 722-739, 'L', 741-843, 'G', 845-1C
C.Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reductase homology cFEH>
F: 538-614/Domain: NADPH--ferrihemoprotein reductase homology cFEH>
F: 538-614/Domain: MappH--ferrihemoprotein reductase homology cFEH>
F: 197/Blinding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Intric-oxide synthase (EC 1.14.13.39) [similarity] - rat
C;Specias: Rattus norvegicus (Norway rat)
C;Specias: Rattus norvegicus (Norway rat)
C;Date: 05-May-2000 #sequence_revision 05-May-2000 #text_change 05-May-2000
C;Accession: 156575
R;Galea, E.; Reis, D.J.; Feinstein, D.L.
J. Neurosci. Res. 37, 406-414, 1994
A;Title: Cloning and expression of inducible nitric oxide synthase from rat astrocytes.
A;Reference number: 156575; MUID:94231594
A;Title: Cloning and expression of inducible nitric oxide synthase from rat astrocytes.
A;Recession: 156575; MUID:94231594
A;Status: translated from GB/EMBL/DDBJ
A;Status: translated from GB/EMBL/DDBJ
A;Residues: 1-1147 cRES>
A;Cross-references: EMBL:U03699; NID:9430718; PIDN:AAC13747.1; PID:9430719
C;Superfanily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reductase homology; NADPH--ferrihemoprotein reductase homology; NADPH--ferrihemoprotein reductase homology cFEH>
F;536-1124/Domain: Rlavodoxin homology cFLX>
F;338-674/Domain: flavodoxin homology cFLX>
F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                          F;194/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96.1%; Score 99; DB 1; Length 1147; 94.4%; Pred. No. 8.2e-08; Live 0; Mismatches 1; Indels
                                                                                                                                           Length 1144;
                                                                                                                                                                                                              1; Indels
                                                                                                                                   Score 99; DB 1;
Pred. No. 8.2e-08;
                                                                                                                                                                                                              Mismatches
                                                                                                                                       96.18;
                                                                                                                                                                                                                                                                                                                       979 GIAPFRSFWQQRLHDSQH 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       982 GIAPFRSFWQQRLHDSQH 999
                                                                                                                                                                                                                                                                                  1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                   Query Match 96.1
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
Matches 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
```

ò

q

```
nitic-oxide synthase (EC 1.14.13.39), inducible - human C:Species: Homo sapiens (man) C:Spate: 16-Feb-1996 #text_change 20-Jun-2000 C:Accession: A49676; JX0345; G01947; I38933; S47566; A47475 R:Charles, I.G.; Palmer, R.M.; Hickery, M.S.; Bayliss, M.T.; Chubb, A.P.; Hall, V.S.; Proc. Natl. Acad. Sci. U.S.A. 90, 11419-11423, 1993 A.Title: Cloning, characterization, and expression of a cDNA encoding an inducible ni A; Reference number: A49676; MUID:94068614 Ascession of a cDNA encoding an inducible ni A; Residues: I-1153 <RES>A; Molecule type: MRNA A; Residues: I-1153 <RES>A; Cross-references: EMBL:X73029; NID:9441452; PIDN:CAA51512.1; PID:g441453 R; Hokari, A.; Zeniya, M.; Esumi, H. A; Liche: Cloning and functional expression of human inducible nitric oxide synthase (A; Reference number: JX0345; MUID:95155267
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Accession: $6540
R;Iwashina, M.; Hirata, Y.; Imai, T.; Sato, K.; Marumo, F.
Eur. J. Blochem. 237, 668-673, 1996
A;Title: Molecular cloning of endothelial, inducible nitric oxide synthase gene from A;Reference number: $65440; MUID:96235231
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A.Status: not compared with conceptual translation
A.Status: not compared with conceptual translation
A.Status: not compared with conceptual translation
A.Molecule type: mRNA
A.Residues: 1-1147 CIMAA.
A.Residues: 1-1147 CIMAA.
C.Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein r
C.Stoperfamily: nitric-oxide synthase; flavodoxin homology cFEA>
C.Stoperfamily: nitric-oxide synthase; flavodoxin homology cFEA>
F.536-535 Kregion: calmodulin binding
F.536-1124 A.Domain: NaDPH--ferrihemoprotein reductase homology cFEA>
F.539-614 A.Pomain: NaDPH--ferrihemoprotein reductase homology cFEA>
F.539-614 A.Pomain: NaDPH--ferrihemoprotein reductase homology cFEA>
F.539-614 A.Pomain: NaDPH--ferrihemoprotein reductase homology cFEA>
F.530-614 A.Pomain: NaDPH--ferrihemoprotein reductase homology cFEA>
F.530-614 A.Pomain: NaDPH--ferrihemoprotein reductase predicted
F.501-910 A.Region: NaDPH binding #status predicted
F.5174-1087 A.Region: NaDPH binding #status predicted
F.1977-Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A Accession: JX0345
A Molecule type: mnnA
A?Residues: 1-607, L', 609-1153 <HOK>
A:Residues: 1-607, L', 609-1153 <HOK>
A:Residues: 1-607, L', 609-1153 <HOK
A;Reperimental source: glioblastoma cell line A-172
A;Reptk, C.; Park, R.; Krishna, G.
Submitted to the EMBL Data Library, July 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nitric-oxide synthase (EC 1.14.13.39) - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 28-Oct-1996 #sequence_revision 13-Mar-1997 #text_change 04-Mar-2000
                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1147;
        Score 99; DB 2;
Pred. No. 8.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 99; DB 2;
Pred. No. 8.2e-08;
0; Mismatches 1
                                                                                           0; Mismatches
        96.1%;
94.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 96.1%;
Best Local Similarity 94.4%;
Matches 17; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            982 GIAPFRSFWQQRLHDSQH 999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                  1 GIVPFRSFWQQRLHDSQH 18
                                                                                               17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A: Reference number: G08912
        Query Match
Best Local Similarity
                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                               RESULT
S65440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A49676
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C; Species: Rattus norvegicus (Norway rat)
C; Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C; Accession: JC5028
R; Tsutsumishita, Y:; Kawai, Y:; Takahara, H:; Onda, T:; Miyoshi, J:; Futaki, S.; Niwa, M R; Tsutsumishita, Y:; Kawai, Y:; Takahara, H:; Onda, T:; Miyoshi, J:; Futaki, S.; Niwa, M R; Tite: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, and u A; Accession: JC5028
A; Residues: 1-1147 < TSUS
C; Comment: This protein synthesizes nitric oxide from L-arginine.
C; Comment: This protein synthesizes nitric oxide from Lorginine.
C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reduct C; Keywords: calmodulin binding; chromoprotein; RAD; flavoprotein; FMN; heme; iron; metal F; 538-61124/Domain: NADPH--ferrihemoprotein reductase homology < FEH>
F; 538-674/Domain: flavodoxin homology < RELX>
F; 197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Becies: Rattus norvegicus (Norway rat)
C; Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C; Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C; Accession: JC5029
R; Tsutsumishita, Y; Kawai, Y; Takahara, H; Onda, T; Miyoshi, J.; Futaki, S.; Niwa, M Biol. Pharm. Bull: 19, 1374-1376, 1996
A; Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, and u A; Reference number: JC5027; MUID:97070590
A; Reference number: JC5029
A; Status: nucleic acid sequence not shown
A; Molecule type: mRNA
A; Residues: 1-1147 <TSU>
A; Residues: 1-1147 <TSU
A; Residues: 1-1147
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            reduc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
F;191-199/Domain: heme-binding #status predicted <HMB>
F;536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;538-674/Domain: flavodoxin homology <FLA>
F;620-647/Domain: FMN binding #status predicted <FMN>
F;764-775,899-910/Domain: FAD binding #status predicted <FAN>
F;764-775,899-910/Domain: RAD binding #status predicted <NDP>
F;975-993,1054-1067/Domain: NADP binding #status predicted <NDP>
F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                      Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96.1%; Score 99; DB 2; Length 114
94.4%; Pred. No. 8.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1; Indels
                                                                                                                                                                                                                                                                                                                                                                                      Score 99; DB 2;
Pred. No. 8.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  synthase (EC 1.14.13.39) U - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               synthase (EC 1.14.13.39) L
                                                                                                                                                                                                                                                                                                                                                                                      96.1%;
94.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       982 GIAPFRSFWOORLHDSOH 999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 94.4'
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 96.1
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      JC5029
nitric-oxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nitric-oxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      à
```

re me

a e

ö

Gaps

.; 0

Length 1147;

```
C;Accession: I46074
R;Bloch, K.D.; Wolfram, J.R.; Brown, D.M.; Roberts, J.D.
R;Bloch, E.D.; Wolfram, J.R.; Brown, D.M.; Roberts, J.D.
A;Title: Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, and A;Reference number: A57622; MUID:96047340
                                                                                                                                                                    A,Gene: NOS2
C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein
C;Seperfamily: calmodulin binding; chromoprotein; FAD; flavoprotein; FNN; heme; iron; IF;536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;536-1124/Domain: flavodoxin homology <FLX>
F;5197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein C;Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nitric-oxide synthase (EC 1.14.13.39) 2C - human (fragment)
N;Alternate names: nitric oxide synthase II
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Accession: 139204
R;Bloch, K.D.; Wolfram, J.R.; Brown, D.M.; Roberts, J.D.
Genomics 27, 526-530, 1995
A;Title: Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, A;Reference number: A57622; MuID:96047340
A;Reference number: A57622; MuID:96047340
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Cross-references: EMBL:U18335; NID:g1050946; PIDN:AAC50245.1; PID:g1050948 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Cross-references: EMBL:U18331; NID:g1041681; PIDN:AAC48479.1; PID:g1041682 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Species: Bos primigenius taurus (cattle)
C;Date: 16-Aug-1996 #sequence_revision 16-Aug-1996 #text_change 11-Jun-1999
                  A; Molecule type: mRNA
A; Residues: 1-1147 < RES>
A; Cross-references: EMBL:U26686; NID:9886072; PIDN:AAA85861.1; PID:9886073
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                    Score 91; DB 1; Length 114
Pred. No. 1.6e-06;
); Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nitric-oxide synthase (EC 1.14.13.39) II - bovine (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 86; DB 2; Les
Pred, No. 5.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary; translated from GB/EMBL/DDBJ A;Molecule type: DNA A;Residues: 1-69 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Gene: GDB:NOS2C
A;Cross-references: GDB:547943; OMIM:600720
                                                                                                                                                                                                                                                                                                                                                                                                                       88.3%;
94.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83.5%;
88.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     982 GIAPFRSFWQQRLHDSQ 998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GIVPFRSFWQQRLHDSQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GIVPFRSFWQQRLHDSQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 88.3
Best Local Similarity 94.1
Matches 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Map position: 17p13.1-17q25
A; Introns: 33/1
C; Superfamily: nitric-oxide sv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Best Local Similarity 88.2
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-136 <BLO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Accession: I46074
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Gene: NOSII
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     pp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
A Accession: G01947
A Status: Trenslated from GB/PMBL/DDBJ
A Manched trenslated from GB/PMBL/DDBJ
A Manched trenslated from GB/PMBL/DDBJ
B A Manched trenslated from GB/PMBL/DDBJ
A Accession: 118933
A Accession
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           B.G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
153165
nitric-oxide synthase (EC 1.14.13.39) [similarity] - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 05-May-2000 #sequence_revision 05-May-2000 #text_change 05-May-2000
C;Accession: 153165
R;Karlsen, A.E.; Andersen, H.U.; Vissing, H.; Larsen, P.M.; Fey, S.J.; Cuartero, Diabetes 44, 753-758, 1995
A;Title: Cloning and expression of cytokine-inducible nitric oxide synthase cDNA A;Reference number: 153165; MUID:95309542
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 99; DB 2; I
Pred. No. 8.2e-08;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        96.18;
94.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
```

and

re N

ö

Gaps

ö

Length 69 Indels വ

```
A; Reference number: JC2471; MUID:95126979
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Reference number: G08911
                                                                                           A; Molecule type: protein A; Residues: 1-1409 < UVA>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Gene: GDB: NOS1; NOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: S28878
                                                                                                                                                                                                                                                                                                                                                                          A; Accession: PC2184
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Molecule type: mRNA
A; Residues: 1-1429 <CGU>
A; Molecule type: mRNA
A; Residues: 1-1429 <CGU>
A; Cross-references: GB:D14552; NID:g397828; PIDN:BAA03415.1; PID:g408806
A; Cross-references: GB:D14552; NID:g397828; PIDN:BAA03415.1; PID:g408806
C; Function:
A; Description: catalyzes the oxidation of an L-arginine guanidino nitrogen and of NADPH C; Superfamily; GLGF domain homology; flavodoxin homology; NADPH--ferrihemoprotein reduct C; Keywords: calmodulin binding; chromoprotein; flavoprotein; heme; iron; metalloprotein; F; 22-95, Domain: GLGF domain homology <GLG>
F; 725-134, Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F; 755-134, Domain: NADPH--Ferrihemoprotein reductase homology <FEH>
F; 757-935, Domain: Flavodoxin homology <FLX>
F; 881-912, Region: FMN binding #status predicted
F; 1027-1038, 1170-1180, Region: NADP binding #status predicted
F; 1245-1263, 1343-1358, Region: NADP binding #status predicted
F; 125, Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Cross-references: EMBL:X59949; NID:g57528; PIDN:CAA42574.1; PID:g57529
A; Accession: S25812
A; Molecule type: protein
A; Molecule type: protein
A; Molecule type: protein
A; Molecule type: protein
B; 361-369;457-464;474-480;670-677;734-738;821-8
B; Uvarov, V.Y.: Lyashenko, A.A.
Biochem. Biophys. Res. Commun. 206, 736-741, 1995
A; Title: The identification of the pterin-binding domain in the nitric oxide synthase's
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Mus musculus (house mouse)
C;Date: 03.Feb-1994 #sequence_revision 03-Feb-1994 #text_change 21-Jul-2000
C;Accession: JN0609
R;Ogura, T.; Yokoyama, T.; Fujisawa, H.; Kurashima, Y.; Esumi, H.
Bjochem. Blophys. Res. Comnun. 193, 1014-1022, 1993
A;Title: Structural diversity of neuronal nitric oxide synthase mRNA in the nervous systA:Reference number: JN0609; MUID:93312283
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C; Species: Rattus norvegicus (Norway rat)
C; Species: Rattus norvegicus (Norway rat)
C; Date: 22-Jan-1993 #sequence_revision 22-Jan-1993 #text_change 04-Mar-2000
C; Date: 22-Jan-1993 #sequence_revision 22-Jan-1993 #text_change 04-Mar-2000
C; Date: 22-Jan-1993 #sequence_revision 22-Jan-1993 #text_change 04-Mar-2000
R; Date: 21, 214, 218, 1991
R*Reference number: S10, 1991
A; Reference number: S10, 1992
A; Reference number: S10, 19
C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein C;Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron;
                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 2; Length 1429
                                                                                                                                                                                       Length 136;
                                                                                                                                                                              Score 79; DB 2; Length 136 Pred. No. 1.4e-05; 3; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nitric-oxide synthase (EC 1.14.13.39), neuronal - mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 78; DB 2; 1
Pred. No. 0.00024;
0; Mismatches 4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nitric-oxide synthase (EC 1.14.13.39) - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Accession: JN0609
A;Status: nucleic acid sequence not shown
                                                                                                                                                                                       76.7%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75.78;
77.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1252 GIAPFRSFWQQRQFDIQH 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                          Query Match
Best Local Similarity 80.0'
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 77.8
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                     4 PFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                           2 PFRSFWQQRLHEAEH 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13
                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
```

```
A. Molecule type: protein
A. Residues: 119-129:132-147:144-156;189-200;264-268, 'V', 270-276;305-310;360-369;376-3
A. Residues: 119-129:132-147:144-156;189-200;264-268, 'V', 270-276;305-310;360-369;376-3
A. Experimental source: colorectum
C. Comment: This protein is a cell signaling agent in the cardiovascular, central and
C. Superfamily: GLGF domain homology; flavodoxin homology; NADPH--ferrihemoprotein red
C. Superfamily: GLGF domain homology clambdilin binding; chromoprotein; flavoprotein; heme; i
F. 725-745/Region: calmodulin binding #status predicted
F. 755-1394/Domain: Clamber-ferrihemoprotein reductase homology cFEH>
F. 757-3134/Domain: NADPH--ferrihemoprotein reductase homology cFEH>
F. 757-315/Romain: Tlavodoxin homology cELX>
F. 881-915/Region: FMD binding #status predicted
F. 1077-1038/Region: NADP binding #status predicted
F. 1245-1263/Region: NADP binding #status predicted
F. 1245-1263/Region: NADP binding #status predicted
F. 1245-1263/Region: NADP binding #status predicted
F. 1545/Binding site: heme iron (Cys) (axial ligand) #status predicted
Riseo, H.G.; Tatsumi, H.; Fujii, J.; Nishikawa, A.; Suzuki, K.; Kangawa, K.; Taniguch
J. Biochem. 115, 602-607, 1994
A:Title: Nitric oxide synthase from rat colorectum: Purification, peptide sequencing,
A;Reference number: PC2184; MUID:94334309
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: mRNA
A; Residues: 1-130, K'. 132-177, LA', 179, 'RP', 182, 'G', 184-1433 <RES>
A; Residues: 1-130, K'. 132-177, LD', 19506339; PIDN: BAA03895.1; PID: 9987662
A; Cross-references: GB: D16408; NID: 950633; PIDN: BAA03895.1; PID: 9987662
R; Nakane, M.; Schmidt, H.H.H.W.; Pollock, J.S.; Foerstermann, U.; Murad, F.
FEBS Lett. 316, 175-180; 1993
A; Title: Cloned human brain nitric oxide synthase is highly expressed in skeletal mus
A; Reference number: S28878; MUID: 93131039
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Cross-references: GDB:132579; OMIM:163731
A;Map position: 12q24.2-12q24.31
C;Superfamily: GLGF domain homology; flavodoxin homology; NADPH--ferrihemoprotein red
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Title: Expression of two types of nitric oxide synthase mRNA in human neuroblastoma A;Reference number: 156508; MUID:94267447
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Residues: 1-130, KK, 132-490, HR/, 493-547, L/, 549-561, A/, 563-1362, I/, 1364-1405, I/
A; Cross-references: GB: L02881; NID: 9189261
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
A; Residues: 1-1433 cPAR>
A; Cross-references: EMBL: U31466; NID: 9951318; PIDN: AAB49040.1; PID: 9951319
R;FUJisawa, H.; Ogura, T.; Kurashima, Y.; Yokoyama, T.; Yamashita, J.; Esumi, H.
J. Neurochem. 63, 140-145, 1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        nitric-oxide synthase (EC 1.14.13.39), neuronal - human
NiAlternate names: nitric oxide synthase 1
C.Species: Homo sapiens (man)
C.Species: Homo sapiens (man)
C.Date: 21-Dec-1996 #sequence_revision 06-Jun-1997 #text_change 04-Mar-2000
C.Accession: GO1946; 155608; S28878
F.Park, C.; Gianotti, C.: Park, R.: Krishna, G.
Submitted to the EMBL Data Library, July 1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1429;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              75.7%; Score 78; DB 2; 177.8%; Pred. No. 0.00024;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A;Accession: G01946
A;Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A,Accession: 156508
A,Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 0; Mismatches
```

Query Match 75.7%; Score 78; DB 2; Length 1433; Best Local Similarity 77.8%; Pred. No. 0.00024; Matches 14; Conservative 0; Mismatches 4; Indels 0; Gaps 0;

Qy 1 GIVPFRSFWQQRLHDSOH 18 || || || || || || || 1 |Db 1256 GIAPFRSFWQQRQFDIQH 1273 Search completed: September 10, 2001, 14:01:13 Job time: 212 sec

```
Sequence 10, Appl
Sequence 6, Appli
Sequence 9, Appli
Sequence 23, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 3, Appli
Sequence 3, Appli
Sequence 2, Appli
                                                                                                                                                                                 Sequence 3, Al
Sequence 2, Al
Sequence 2, Al
Sequence 2, Al
Sequence 24, I
Sequence 2, Al
Sequence 2, Al
                                                                                                                                                                                                                                                                                                                                                 Sequence 13,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Billiar, Timothy R.
APPLICANT: Nussler, Andreas K.
APPLICANT: Geller, David A.
APPLICANT: Simmons, Richard L.
TITLE OF INVENTION: CDNA Clone for Human Inducible Nitric
TITLE OF INVENTION: Oxide Synthase And Process for Preparing Same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/314,917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 1;
  US-08-319-866-10
US-09-123-708-6
US-09-123-708-6
US-08-123-66-9
US-08-047-026A-23
US-08-047-026A-23
US-08-053-703A-2
US-08-553-703A-3
US-08-553-703A-3
US-08-553-703A-3
US-08-553-703A-3
US-08-553-703A-3
US-08-553-703A-3
US-08-553-703A-3
US-08-553-703A-2
US-08-553-703A-2
US-08-523-703A-2
US-09-206-021-3
US-08-924-847A-2
US-08-924-847A-2
US-08-924-847A-2
US-08-924-847A-2
US-08-924-847A-2
US-08-91-20-052-2
US-08-272-255-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ADDRESSEE: Arnold B. Silverman
ADDRESSEE: Eckert Seamans Cherin & Mellott
STREET: 600 Grant Street, 42nd Floor
CITY: Pittsburgh
                                                                                                                                                                                                                                                                                                                                                                                                             ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 103;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 FILING DATE:
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/981,344
FILING DATE: 25-NOV-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               116972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ; Sequence 2, Application US/08314917
; Patent No. 5468630
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NAME: Silverman, Arnold B.
REGISTRATION NUMBER: 22,614
REFRENCE/CDCKET NUMBER: 1169
TELECOMMUNICATION INFORMATION:
TELEPHONE: (412) 566-6000
MINING AND SECOND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TELEX: 866172
INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS:
LENGTH: 1153 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein US-08-314-917-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     GENERAL INFORMATION:
      USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COUNTRY: US
ZIP: 15219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-314-917-2
        Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
        Sequence 2, Appli
Sequence 1, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
Sequence 2, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4, Appli
5, Appli
4, Appli
21, Appl
4, Appli
4, Appli
21, Appli
                                                                                                                                           % Search time 35.97 Seconds
(without alignments)
10.304 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Ap
Sequence 2, Ap
Sequence 2, Ap
Sequence 12, Ap
Sequence 13, A
Sequence 11, A
Sequence 4, Ap
Sequence 4, Ap
Sequence 4, Ap
Sequence 21, A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Issued_Patents_AA:*
1: /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
2: /cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
3: /cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
4: /cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
5: /cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
                         4.5
Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-314-917-2
US-08-265-046-2
US-08-465-52-2
PCT-US93-11401-2
PCT-US93-11401-2
US-08-147-812-5
US-08-147-812-5
US-09-123-708-2
US-09-123-708-2
US-09-123-708-2
US-09-123-708-2
US-09-123-708-2
US-09-123-708-2
US-09-123-708-13
US-08-866-11
US-08-866-11
US-08-86-11
US-09-010-998-5
US-09-010-998-5
US-09-220-574-4
US-09-123-708-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           US-08-880-342-21
US-08-365-486A-19
US-08-880-342-19
                                                                                                                                                                                                                                                                                                                                                                                                       Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-09-220-574-3
US-07-908-245-2
                                                                                                                                                                                                                                                                                                                                                                    197339 seqs, 20590346 residues
                                                                                                                                               September 10, 2001, 13:58:11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SUMMARIES
                           GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

    protein search, using sw model

                                                                                                                                                                                                                                                                                                         BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                1 GIVPFRSFWOORLHDSQH 18
                                                                                                                                                                                                                          US-08-833-506C-25
                                                                                                                                                                                                                                                                                                                                                                                                                                                 length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query
Match Length
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
10000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1000.0
1
```

sed

Minimum DB Maximum DB

Database

Perfect score:

Sequence:

OM protein

Run on:

Scoring table:

111033 1033 1033

Score

Result No.

```
FULTANT: Sequence 2, Application PCTUS9311401
Sequence 2, Application PCTUS9311401
Sequence 2, Application PCTUS9311401
GENERAL INFORMATION:
APPLICANT: Balliar, Andreas K.
APPLICANT: Geller, David A.
APPLICANT: Simmons, Richard L.
TITLE OF INVENTION: Oxide Synthase And Process for Preparing Same
           CDNA Clone for Human Inducible Nitric
Oxide Synthase And Process for Preparing Same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                 E: Floppy disk
IBM PC compatible
SYSTEM: PC-DOS/MS-DOS
PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA: CAPPLICATION NUMBER: PCT/US93/11401 FILMG DATE: 25-NOV-1992
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100.0%; Score 103; DB 2;
100.0%; Pred. No. 4.8e-09;
tive 0; Mismatches 0;
      TITLE OF INVENTION: CDNA Clone for Human Indu WIMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS: ARBESSE: Lewis F. Gould, Jr. ADDRESSEE: Lewis F. Gould, Jr. ADDRESSEE: Eckert Seamans Cherin & Mellott STREET: 1700 Market St. Suite 3232
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ADDRESSEE: Arnold B. Silverman
ADDRESSEE: Eckert Seamans Cherin & Mellott
STREET: 600 Grant Street, 42nd Floor
CITY: Pittsburgh
                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: GOULD, Jr., Lewis F.
REGISTRATION NUMBER: 25,057
REFERENCE/DOCKET NUMBER: 116972-6
TELECOMUNICATION INFORMATION:
TELEPHONE: (215) 575-6020
TELEFAX: (215) 575-6015
                                                                                                                                                                                                                                                                                                                                                      CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/465,522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          985 GIVPFRSFWQQRLHDSQH 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
LENGTH: 1153 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GIVPFRSFWQORLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                        ZIP: 19103
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                            COMPUTER: IBM PC
OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                         USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOLECULE TYPE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COUNTRY: US
ZIP: 15219
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ΡA
                                                                                                                                                                                     STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                        SOFTWARE:
                                                                                                                                                                                                         COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             US-08-465-522-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                 ö
                                 Gaps
                                 .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                               Indels
                                                                                                                                                                                                                                                                                     APPLICANT: Timothy R. Billiar
APPLICANT: Edith Tzeng
APPLICANT: Edith Tzeng
APPLICANT: Andreas K. Nussler
APPLICANT: Andreas K. Nussler
APPLICANT: Richard L. Simmons
TITLE OF INVENTION: Inducible Nitric Oxide Synthase
TITLE OF INVENTION: Gene for Treatment of Disease
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lewis F. Gould, Jr.
ADDRESSEE: Lewis F. Gould, Jr.
ADDRESSEE: Lewis F. Gould, Jr.
ADDRESSEE: ADDRESSE: ADDRESSE: ADDRESSEE: CONTENTION MARKET STREET: TOOM MARKET STREET.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SOFTWARE: Patentin Release #1.0, Version #1.25 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/265,046 FILING DATE: 24-JUN-1994 CLASSIFICATION: 536
        Pred. No. 4.8e-09;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 103; DB 1;
100.0%; Pred. No. 4.8e-09;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ATTORNEY/AGENT INFORMATION:
NAME: GOULD, LEWIS F. Jr.
REGISTRATION NUMBER: 25,057
REFERENCE/DOCKET NUMBER: 119130
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 2, Application US/08465522

Batent No. 5882908

GENERAL INFORMATION:

APPLICANT: Billiar, Timothy R.

APPLICANT: Nussler, Andreas K.

APPLICANT: Geller, David A.

APPLICANT: Simmons, Richard L.
                                                                                                                                                                                                                           Sequence 2, Application US/08265046
Patent No. 5658565
GENERAL INFORMATION:
        100.08;
                                                                                                985 GIVPFRSFWQQRLHDSQH 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TELEPHONE: (215) 575-6020
TELEFAX: (215) 575-6015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               985 GIVPERSFWQQRLHDSQH 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE CHARACTERISTICS:
LENGTH: 1153 amino acids
                                                                         1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GIVPFRSFWQQRLHDSQH 18
Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 100.
Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; TOPOLOGY: linear;
; MOLECULE TYPE: protein
US-08-265-046-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ZIP: 19103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STATE: PACCOUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 3
US-08-465-522-2
                                                                                                                                                                                  RESULT 2
US-08-265-046-2
                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                            à
```

ö

Gaps

ö

Length 1153;

```
100.0%; Score 103; DB 5;
nilarity 100.0%; Pred. No. 4.8e-09;
Conservative 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COMPUTER READBLE FORM:
MEDIUM TYPE: Floppy Disk
COMPUTER: Macintcoh Centris650
CORTUTER: Macintcoh Centris650
CORTUTER: Macintcoh 7.0.1
SOFTWARE: Microsoft Word 5.1a
CURRENT APPLICATION DATA:
APPLICATION NUMBER: 07/841,641
FILING DATE: 02-FEB-1992
ATTONNEY/AGENT INFORMATION:
NAME: WALLEN JOHN W III
REGISTRATION NUMBER: 35,403
REGISTRATION NUMBER: 35,403
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     186581A
                                                                                                                                                                                                                                                                                                                                                                                                                                                  1: Merck & Co., Inc.
126 East Lincoln Avenue
                                                                                                                                                                                                                                    Sequence 5, Application US/08147812
Patent No. 5766909
GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              REPERENCE/DOCKET NUMBER: 1865
REPERENCE/DOCKET NUMBER: 1865
TELECOMMUNICATION INFORMATION:
TELEPHONE: (908) 594-3905
TELEX: 138825
INFORMATION FOR SEQ ID NO: 5:
SEQUENCE CHARACTERISTICS:
                                                                                                                985 GIVPFRSFWQQRLHDSQH 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1144 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        979 GIAPFRSFWQQRLHDSQH 996
                                                                                          1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 94.4 Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STREET: 126 East I
CITY: Rahway
STATE: New Jersey
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      amino acid
GY: linear
          Query Match
Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07065
                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ; TOPOLOGY:
US-08-147-812-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 7
US-08-319-866-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY:
                                                                                                                                                                                              RESULT 6
US-08-147-812-5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                   qq
                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            APPLICANT: University of Pittsburgh of the Commonwealth System of Higher APPLICANT: Education TITLE OF INVENTION: Inducible Nitric Oxide Synthase TITLE OF INVENTION: Gene for Treatment of Disease NUMBER OF SEQUENCES: 2 CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/07849
FILING DATE:
CLASSIFICATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%; Score 103; DB 5; 100.0%; Pred. No. 4.8e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE: Lewis F. Gould, Jr.
ADDRESSEE: Eckert Seamans Cherin & Mellott
STREET: 1700 Market Street, Suite 3232
CITY: PA
STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
CLASSIFICATION:
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/981,344
CLASSIFICATION:
CLASSIFICATION:
NAME: S11verman, Arnold B.
REGISTRATION NUMBER: 22,614
REFERENCE/DOCKET NUMBER: 116972
TELECOMMUNICATION INCORMATION:
TELECAMONICATION INCORMATION:
TELECAMONICATION INCORMATION:
TELECAMONICATION INCORMATION:
TELECAMONICATION INCORMATION:
TELECAMONICATION INCORMATION:
TELECAMONICATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 1153 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                119130-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PCT-US95-07849-2; Sequence 2, Application PC/TUS9507849; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ATTORNEY/AGENT INFORMATION:
NAME: Gould, Lewis F. Jr.
REGISTRATION NUMBER: 25,057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            REFERENCE/DOCKET NUMBER: 11
TELECOMMUNICATION INFORMATION: TELEPHONE: (215) 575-6020
TELEFAX: (215) 575-6015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       985 GIVPFRSFWQQRLHDSQH 1002
                                                                                                                                                                                                                                                                                               : 1153 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE CHARACTERISTICS:
LENGTH: 1153 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO:
                                                                                                                                                                                                                                                                                                                                        ; TOPOLOGY: linear; MOLECULE TYPE: protein PCT-US93-11401-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                             Ouery Match
Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               COUNTRY: US
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PCT-US95-07849-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 õ
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                  APPLICANT: Xie, Qiao-wen
APPLICANT: Nathan, Carl F.
APPLICANT: Nathan, Carl R.
APPLICANT: Mumford, Richard A.
APPLICANT: Calaycay, Jimmy Ramos
APPLICANT: Calaycay, Jimmy Ramos
NUMBER OF SEQUENCES: 6
CORRESPONDENCES: 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                96.1%; Score 99; DB 1; Length 1144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 12, Application US/08319866
Patent No. 592923
BENERAL INFORMATION:
APPLICANT: Tully, Timothy P.
APPLICANT: Yin, Jerry C.
APPLICANT: Regulski, Michael
TITLE OF INVENTION: CLONING AND CHARACTERIZATION OF GENES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1; Indels
Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 2.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0; Mismatches
```

```
ö
                                                                                                                                                                                                                                                                                               APPLICANT: SCHRADER, Jurgen
APPLICANT: SCHRADER, Jurgen
APPLICANT: GOBGCKE, Axel
TITLE OF INVENTION: DNA EXPRESSION VECTORS FOR USE IN THE GENE THERAPEUTIC
TITLE OF INVENTION: TREATMENT OF VASCULAR DISORDERS
FILE REFERENCE: 511169-2004
CURRENT APPLICATION NUMBER: US/09/123,624
CURRENT FILING DATE: 1998-07-28
PRIOR FILING DATE: 1996-03-01
PRIOR FILING DATE: 1996-03-01
PRIOR APPLICATION NUMBER: 4411402.8
PRIOR FILING DATE: 1994-03-31
NUMBER OF SEQ ID NOS: 6
SOFTWARE: PatentIn Ver. 2.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                              Gaps
                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  APPLICANT: Thigpen, Anice
APPLICANT: Thigpen, Anice
APPLICANT: Hohmeler, Hans-Ewald
APPLICANT: Newgard, Christopher B.
APPLICANT: Shimabukuro, Michio
APPLICANT: Shimabukuro, Michio
APPLICANT: Rhodes, Christopher J.
APPLICANT: Rhodes, Christopher J.
APPLICANT: Hugl, Sigrun R.
APPLICANT: Hugl, Sharon
TITLE OF INVENTION: METHODS AND COMPOSITIONS RELATING
TITLE OF INVENTION: TO NO-MEDIATED CYTOTOXICITY
NUMBER OF SEQUENCES: 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 99; DB 4; Length 114-Pred, No. 2.2e-08;
Pred. No. 2.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARRE: Patentin Release #1.0, Version #1.30
                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 White & Durkee
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/126,109
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ; Sequence 12, Application US/09126109; Patent No. 6171856
                                                                                                                                                                                                                                               ; Sequence 2, Application US/09123624
; Patent No. 6149936
                         94.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 96.1%;
Best Local Similarity 94.4%;
Matches 17; Conservative
                                                                                                              979 GIAPFRSFWQQRLHDSQH 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 979 GIAPFRSFWQQRLHDSQH 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GIVPFRSFWQQRLHDSQH 18
                    Best Local Similarity 94.43
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ADDRESSEE: Arnold, Wh. STREET: P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
ZIP: 77210
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: Arnold, W
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; ORGANISM: Mus musculus
US-09-123-624-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    GENERAL INFORMATION:
APPLICANT: Thigper
                                                                                                                                                                                                                                                                                           GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Houston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               LENGTH: 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 10
US-09-126-109-12
                                                                                                                                                                                                   RESULT 9
US-09-123-624-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TYPE: PRT
                                                                                            à
                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              op
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            GENERAL INFORMATION:

GENERAL INFORMATION:

APPLICANT: SCHRADER, Axel

TITLE OF INVENTION: DNA EXPRESSION VECTORS FOR USE IN GENE THERAPEUTIC

TITLE OF INVENTION: TREATMENT OF VASCULAR DISORDERS

FILE REPERENCE: 511169-2003

CURRENT APPLICATION NUMBER: US/09/123,708

CURRENT FILING DATE: 1998-07-28

EARLIER APPLICATION NUMBER: 08/553,503

EARLIER FILING DATE: 1996-03-01

EARLIER APPLICATION NUMBER: 1996-03-01

EARLIER PILING DATE: 1996-03-31
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   96.1%; Score 99; DB 4; Length 1144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1; Indels
                                         NUMBER OF SEQUENCES: 24
CORRESPONDENCE ADDRESS:
STREET: Hamilton, Brook, Smith & Reynolds, P.C.
STREET: Two Militia Drive
CITY: Lexington
STATE: Massachusetts
COUNTRY: USA
                       TITLE OF INVENTION: ASSOCIATED WITH LONG-TERM MEMORY
                                                                                                                                                                                                                                                                                                        SOFTWARE: Patentin Release #1.0, Version #1.30 CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/319,866 FILING DATE: TOCT-1994 CLASSIFICATION: 514 PRIOR APPLICATION DATA:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       96.1%; Score 99; DB 2; I
94.4%; Pred. No. 2.2e-08;
Live 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CSHL94-03
                                                                                                                                                                                              ZIP: 02173
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2, Application US/09123708 Patent No. 6146887
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NAME: Granahan, Patricia
REGISTRATION NUMBER: 32.227
REFERENCE/DOCKET NUMBER: CS
TELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (617) 861-6240
TELEFAX: (617) 861-9540
INFORMATION FOR SEQ ID NO: 12:
SEQUENCE CHARACTERISTICS:
LENGTH: 1144 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        979 GIAPFRSFWQQRLHDSQH 996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FILING DATE: ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NUMBER OF SEQ ID NOS: 6
SOFTWARE: Patentin Ver. 2.0
SEQ ID NO 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 96.1
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TYPE: PRT
; ORGANISM: Cytomegalovirus
US-09-123-708-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              LENGTH: 1144
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         US-08-319-866-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-09-123-708-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
```

g ð

```
Gaps
                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
0
                                                                                                                                            ö
                                                                                                                                                                                                       RESULT 12
US-08-365-486A-13
Sequence 13, Application US/08365486A
Sequence 13, Application US/08365486A
Sequence 13, Application US/08365486A
GENERAL INFORMATION:
APPLICANT: Webster, Keith A.
APPLICANT: Bishopric, Nanette H.
TITLE OF INVENTION: Tissue Specific Hypoxia Regulated
TITLE OF INVENTION: Therapeutic Constructs
NUMBER OF SEQUENCES: 31
CORRESPONDENCE ADDRESS:
ADDRESSE: Dehlinger & Associates
STREET: 350 Canbridge Avenue, Suite 250
CITY: Palo Alto
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1429;
                                                                                                  75.7%; Score 78; DB 1; Length 1429; 77.8%; Pred. No. 8.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
FILING DATE: J2-DEC-1994
CLASSIFICATION: 514
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 78; DB 2; 1
Pred. No. 8.3e-05;
0; Mismatches 4.
                                                                                                                                            0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence II, Application US/08319866; Patent No. 592923; GENERAL INFORMATION: APPLICANT: Tully, Timothy P. APPLICANT: Yin, Jerry C. APPLICANT: Regulski, Michael
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ATTORNEY/AGENT INFORMATION:
NAME: Sholtz. Charles K.
REGISTRATION NUMBER: 38,615
REFERENCE/COCKET NUMBER: 8255-
TELECOMMUNICATION INFORMATION:
TELEFORE: (415) 324-0860
INFORMATION FOR SEO ID NO: 13:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     75.7%;
77.8%;
                                                                                                                                                                                                   || |||||||||| | ||
| 1252 GIAPFRSFWQQRQFDIQH 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Db 1252 GIAPFRSFWQQRQFDIQH 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1429 amino acids
                                                                                                                                                                                 1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 GIVPFRSFWQQRLHDSQH 18
                                                                                                Query Match
Best Local Similarity 77.8
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MOLECULE TYPE: protein US-08-365-486A-13
; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-07-642-002-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZIP: 94306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
US-08-319-866-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   LENGTH:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         δý
                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         GENERAL INFORMATION:
APPLICANT: Bredt, David S.
APPLICANT: Hwang, Paul M.
APPLICANT: Reed, Randall
APPLICANT: Ryder, Solomon H.
TITLE OF INVENTION: Purification and Molecular Cloning of Nitric
TITLE OF INVENTION: Oxide Synthase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 99; DB 4; Length 1146;
Pred. No. 2.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STREET: One Thomas Circle, NW STREET: One Thomas Circle, NW STATE: DC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           0; Mismatches
                                PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 60/055,092
FILING DATE: 30-010-1997
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US UNKNOWN
FILING DATE: 03-MAR-1998
ATTORNEY AGENT INFORMATION:
NAME: MCMILLIAN, Nabeela R.
RECISTRATION NUMBER: P-43.363
RECISTRATION NUMBER: P-43.363
RECENENCE/DOCKET NUMBER: UTSD:560
TELECOMMUNICATION INFORMATION:
TELEPHONE: (512),418-3000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1107.033576
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA
ZIP: 20005
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PATENTIN Release #1.24
CURRENT APPLICATION DATA:
RAPLICATION UNBER: US/07/642,002
FILING DATE: 19910118
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CLASSIFICATION: 435
ATTORNEY/AGENT INFORMATION:
NAME: Kagan, Sarah A.
REGISTRATION NUMBER: 32,141
REFERENCE/DOCKET NUMBER: 1107
TELECOMMUNICATION INFORMATION:
TELEPHONE: (202) 296-5500
TELEPHONE: (202) 296-7830
INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 2, Application US/07642002
Patent No. 5268465
                                                                                                                                                                                                                                                       TELEPHONE: (512) 418-3000
TELEPRX: (512) 474-7577
INFORMATION FOR SEQ ID NO: 12: SEQUENCE CHARACTERISTICS:
LENGTH: 1146 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 96.18;
94.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-JUL-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1429 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 96.1%
Best Local Similarity 94.4%
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE CHARACTERISTICS:
                                                                                                                                                                                                                                                                                                                                                                                                     ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-09-126-109-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LENGTH: 1429 amir
TYPE: AMINO ACID
                                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-07-642-002-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     a
```

ò

ö

```
Score 78; DB 4; Length 1429;
Pred. No. 8.3e-05;
0; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence 4, Application US/08705625
Patent No. 5908756
GENERAL INFORMATION:
APPLICANT: STATE OF INVENTION: Protein Inhibitor of Neuronal Nitric TITLE OF INVENTION: Protein Inhibitor of Neuronal Nitric TITLE OF INVENTION: Oxide Synthase NUMBER OF SEQUENCES: 16
CORRESPONDENCE ADDRESS:
ADDRESSEE: ADDRESSE: ADDRESSE: ADDRESSE: Nitrice STREET: 1001 G Street, N.W.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CITY: Washington, D.C.
COUNTRY: U.S.A.
ZIP: 20001-4597.
COMPUTER: READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                       NAME: Sholtz, Charles K.
REGISTRATION NUMBER: 38,615
REFERENCE_DOCKET NUMBER: 8255-0018.30
TELECOMMUNICATION INFORMATION:
TELEPHONE: (415) 324-0860
INFORMATION FOR SEQ ID NO: 13:
SEQUENCE CHARACTERISTICS:
LENGTH: 1429 amino acids
                                                                        CLASSIFICATION: 514
PRIOR APPLICATION DATA:
APPLICATION NUMBER: PCT/IB95/00996
FILING DATE: 13-NOV-1995
PRIOR APPLICATION DATA:
APPLICATION UNMER: 08/365,486
FILING DATE: 23-DEC-1994
ATTORNEY/AGENT INFORMATION:
23-JUN-1997
23-JUN-1997
23-JUN-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICATION NUMBER: US/08/705,625
FILING DATE: 30-AUG-1996
CLASSIFICATION: 530
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       FILING DATE: 30-AUG-1996
CLASSIFICATION: 530
ATTORNEY/AGENT INFORMATION:
NAME: Kagan, Sarah A.
REGISTRATION NUMBER: 32,141
REFERENCE/DOCKET NUMBER: 011(
TELECHMUNICATION INFORMATION:
TELECHMONE: 202-508-9100
TELEFAX: 202-508-9100
INFORMATION FOR SEQ ID NO: 4:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                32,141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1252 GIAPFRSFWQQRQFDIQH 1269
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 75.7%;
Best Local Similarity 77.8%;
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         LENGTH: 1430 amino acids TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE CHARACTERISTICS:
               CURRENT APPLICATION DATA:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-880-342-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TOPOLOGY: linear
MOLECULE TYPE: protein
                                                                                                                                                                                                                                                                                                                                                                                                                                                           TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 15
US-08-705-625-4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ó;
  TITLE OF INVENTION: CLONING AND CHARACTERIZATION OF GENES TITLE OF INVENTION: ASSOCIATED WITH LONG-TERM MEMORY NUMBER OF SEQUENCES: 24
CORRESPONDENCE ADDRESS:
ADDRESSE: Hamilton, Brook, Smith & Reynolds, P.C.
STREET: Two Militia Drive
CITY: Lexington
STATE: Massachusetts
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         75.7%; Score 78; DB 2; Length 1429; 77.8%; Pred. No. 8.3e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence 13, Application US/08880342

Patent No. 6218179
GENERAL INFORMATION:
APPLICANT: Bishopric, Nanette H.
APPLICANT: Murphy, Brian
APPLICANT: Murphy, Brian
APPLICANT: Green, Christopher J.
TITLE OF INVENTION: Tissue Specific Hypoxia Regulated
TITLE OF INVENTION: Therapeutic Constructs
NUMBER OF SEQUENCES: 37
CORRESPONDENCE ADDRESS:
ADDRESSEE: Dehlinger & Associates
STREET: 350 Cambridge Avenue, Suite 250
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4; Indels
                                                                                                                                                                                                                     COMPUTER FEADABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/319,866
FILING DATE: 7-CT-1994
PION APPLICATION DATA:
APPLICATION NUMBER: ELING DATE:
APPLICATION NUMBER: ELING DATE:
APPLICATION NUMBER:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PatentIn Release #1.0, Version #1.25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CSHL94-03
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: Floppy disk COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS SOFTWARE: Patentin Policy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NAME: Granahan, Patricia
REGISTRATION NUMBER: 32,227
REERENCE/OCKET NUMBER: CSHL;
TELECOMMUNICATION INFORMATION:
TELEPRA: (617) 861-6240
INFORMATION FOR SEQ ID NO: 11:
SEQUENCE CHARACTERISIES:
LENGTH: 1429 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 77.8
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ; MOLECULE TYPE: protein
US-08-319-866-11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 94306
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRANDEDNESS
                                                                                                                                                                                                        02173
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
US-08-880-342-13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           . STATE: C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
```

ö

Gaps

ö

```
; HYPOTHETICAL: NO
; ORIGINAL SOURCE:
; ORGANISM: HOMO Sapiens
US-08-705-625-4
```

ö 0; Gaps Query Match 75.7%; Score 78; DB 2; Length 1430; Best Local Similarity 77.8%; Pred. No. 8.3e-05; Matches 14; Conservative 0; Mismatches 4; Indels

Oy 1 GIVPFRSFWQQRLHDSQH 18 | | | | | | | | | | | | | | | Db 1252 GIAPFRSFWQQRQFDIQH 1269 ò

Search completed: September 10, 2001, 14:01:55 Job time: 224 sec

This Page Blank (uspto)

; Search time 67.08 Seconds (without alignments)
16.268 Million cell updates/sec GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd. September 10, 2001, 13:57:36 OM protein - protein search, using sw model Run on:

US-08-833-506C-25 Title: Perfect score:

1 GIVPFRSFWQQRLHDSQH 18 Scoring table: Sequence:

412676 segs, 60623988 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Searched:

412676 Total number of hits satisfying chosen parameters:

length: 0 length: 2000000000 Minimum DB seq Maximum DB seq

Minimum Match 0% Maximum Match 100% Listing first 45 summaries Post-processing:

A_Geneseq_0601:* Database :

| SIDS8/gcgdata/geneseq/geneseqp/AA1980.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1981.DAT:*
| SIDS8/gcgdata/geneseqp/AA1983.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1983.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1985.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1987.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1987.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1987.DAT:*
| SIDS8/gcgdata/geneseq/geneseqp/AA1988.DAT:*

/ SIDS8/gcgdata/geneseq/yeneseqp/AA1989.DAT:
/ SIDS8/gcgdata/geneseq/geneseqp/AA1989.DAT:
/ SIDS8/gcgdata/geneseqf/geneseqp/AA1990.DAT:
/ SIDS8/gcgdata/geneseqf/geneseqp/AA1991.DAT:
/ SIDS8/gcgdata/geneseqf/geneseqp/AA1992.DAT:
/ SIDS8/gcgdata/geneseqf/geneseqp/AA1993.DAT:
/ SIDS8/gcgdata/geneseqf/geneseqp/AA1994.DAT:
/ SIDS8/gcgdata/geneseqf/geneseqp/AA1996.DAT:
/ SIDS8/gcgdata/geneseqf/geneseqp/AA1999.DAT:
/ SIDS8/gcgdata/geneseqf/geneseqp/AA2000.DAT:

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed and is derived by analysis of the total score distribution.

SUMMARIES

Human iNOS peptide Human iNOS peptide Sequence encoded b Hepatocyte inducib Amino acid sequenc Human inducible ni Mouse iNOS (982-998) Human iNOS (985-10 Human iNOS (985-10 Human iNOS peptide Description AAW81241 AAW81186 AAW81275 AAW81202 AAW81203 AAR55764 AAR8464 AAB31724 AAB66724 AAW81187 AAW81188 a DB Length 18 18 18 18 1153 1153 Query 100.0 100.0 100.0 100.0 100.0 100.0 100.0 96.1 100.0 Score 103 103 103 103 103 103 103 99 4 7 7 8 8 110 Result Š.

	Inducible nitric o	Inducible nitric o	Rat inducible nitr	Nitric-oxide-synth	Human inducible ni	Human iNOS peptide	Human 1NOS peptide	Human 1NOS peptide	Human iNOS peptide	Human nNOS peptide	Human nNOS (1256-1	Human iNOS peptide	Sequence of all or	Rat neuronal nitri	Rat neuronal nitri	Neuronal nitrogen	Amino acid sequenc	Human nitric oxide	Rat penile neurona	Human neuronal nit	Human eNOS peptide	Human iNOS peptide	Human eNOS (1017-1	Bovine eNOS (1019-	Human endothelial	Human endothelial	Amino acid sequenc	Human nitric oxide	Endothelial nitrog	Bovine endothelial		Human iNOS peptide	
AAR77360	AAW51246	AAW96322	AAW02571	AAR63206	AAW36113	AAW81244	AAW81304	AAW81308	AAW81248	AAW81242	AAW81189	AAW81323	AAR44489	AAW56786	AAY28475	AAR77362	AAB31725	AAB66725	AAW35566	AAY28476	AAW81243	AAW81324	AAW81190	AAW81191	AAR41668	AAW57315	AAB31726	AAB66726	AAR77363	AAR93930	AAW81245	AAW81305	AAW81309
16	19	20	17	15	19	19	19	19	19	19	19	19	14	19	20	16	22	22	18	20	19	19	19	19	14	19	22	22	16	17	19	19	19
1144	1144	1146	1147	1153	1153	15	15	15	15	18	18	18	1429	1430	1430	1433	1433	1433	1463	1554	15	15	18	18	2	1203	20	20	20	20	12	12	12
96.1	9	9	9	96.1	9	9	9	'n,	83.5	5.	75.7	5.	δ.	S	5.	S	2	5.	5.	ς.	ď	ς.	ς.	ς.	\sim	α	C)	\sim	2.	ς.	æ	8	9
66	66	66	66	66	66	68	83	98	98	78	78	78	78	78	78	78	78	78	78	78	75	75	75	75	75	75	75	75	75	75	71	71	89
12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	. 38	. 40	41	42	43	44	45

ALIGNMENTS

AAW81241 standard; peptide; 18 AA. 30-APR-1999 (first entry) AAW81241

Human iNOS peptide fragment PS-5183

Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; minic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.

Homo sapiens

/note= "His residue amidated" Location/Qualifiers Key Modified-site WO9845710-A1 15-0CT-1998

97WO-US06500 97US-6667777 11-APR-1997; 07-APR-1997;

æ (WEBB/) WEBBER

WPI; 1998-594495/50 Webber R;

```
ö
                                                                                                                     This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriaais, and multiple sclerosis. This sequence in expresents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (inOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Inducible nitric oxide synthase; INOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
              Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                  ő
                                                                                                                                                                                                                                                                                                                                                                                              Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                           100.0%; Score 103; DB 19;
100.0%; Pred. No. 4e-10;
tive 0; Mismatches 0;
                                                    entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human iNOS (985-1002) peptide fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Disclosure; Page 21; 93pp; English.
                                                                                       Example 4; Page 37; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAW81186 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97us-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                         18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              α.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-0CT-1998
                                                                                                                                                                                                                                                                                                         nvention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Webber R;
                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW81186;
                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAW81186
ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
```

```
ö
tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide fragment from human iNOS which is used in the method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human inos which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              monoclonal antibody; mimić; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autolmmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nitric oxide synthase; 1NOS; human; immunoassay; detection;
                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human INOS or mimics.
                                                                                                                                                                                                  ;
0
                                                                                                                                                                    Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 18;
                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB 19;
                                                                                                                                                                    DB 19;
                                                                                                                                                                                                 ö
                                                                                                                                                                  100.0%; Score 103; DB 19
100.0%; Pred. No. 4e-10;
iive 0; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 103; DB 1
Pred. No. 4e-10;
                                                                                                                                                                                                                                                                                                                                                  AAW81275 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Fig 1; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human iNOS peptide fragment #1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97US-6667777
                                                                                                                                                                                                                                   1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1998-594495/50.
                                                                                                                                                                    Query Match
Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                     of the invention.
                                                                                                                    18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo saptens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                   30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-0CT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Inducible;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               invention.
                                                                                                                                                                                                                                                                                                                                                                                  AAW81275;
                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Webber
                                                                                                                                                                                                                                                                                                                                  AAW81275
                                                                                                                                                                                                                                                                                                                   RESULT
     888888888
                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                              q
```

3

Matches

q

à

AAW81202;

AAW81202

Ношо

```
This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                               nitric oxide synthase; iNOS; human; immunoassay; detection;
                                                                                                           monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; Mab.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence encoded by the cDNA clone for human hepatocyte inducible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nitric oxide synthase; hepatocyte; hypotensive shock; therapy
                                                        Human iNOS peptide fragment capable of binding Mab 2A12-A4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 103; DB 19;
100.0%; Pred. No. 4e-10;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR55764 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Example 3; Page 32; 93pp; English.
                                                                                                                                                                                                                                                                                                                  97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                    30-APR-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Best_Local Similarity
Matches 18; Conser
                                                                                                                                                                                                                                                                                                                                                                                             ď.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18 AA;
                                                                                                                                                                                                                                                                                                                                                                                               (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     28-DEC-1994
                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                  11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                      07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                     WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9412645-A.
                                                                                                                                                                                                                                                                           15-0CT-1998
                                                                                                 Inducible;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR55764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                     Webber
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
AAR55764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ò
  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence
                                                                                                                                                                                                                                                                                                                                  Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; Mab.
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This invention describes an immunoassay method where a sample with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
  .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 18;
                                                                                                                                                                                                                                                                                             Human iNOS peptide fragment capable of binding Mab 1E8-B8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 103; DB 19;
Pred. No. 4e-10;
Mismatches 0;
  ;
  Mismatches
                                                                                                                                                                              ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAW81203 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Example 3; Page 32; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
;
0
                                                                                                                                                                        AAW81202 standard; peptide; 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match 100.0%;
Best Local Similarity 100.0%;
Matches 18; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GIVPFRSFWQQRLHDSQH 18
                                        GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                       (first entry)
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-APR-1997;
                                                                                                                                                                                                                                                       30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-0CT-1998
                                                                                                                                                                                                                                                                                                                                Inducible;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 invėntion
```

ö

Gaps

ö

Indels

Sequence

AAW81203

ax 2

Ŋ

셤

ò

AAW81203 RESULT

Length 18;

ö

Gaps

12:14:44 2001

Wed Sep 12

```
Nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, used for isolated tissue perfusion treatment to enhance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The specification describes a method for gene therapy for enhancing and inducting angiogenesis. The method uses a nucleic acid delivery vehicle, which comprises a nucleic acid encoding nitric oxide synthase (NOS). The delivery vehicle is used for the manufacture of a pharmaceutical composition for isolated tissue perfusion treatment. The method is useful for enhancing and/or inducing angiogenesis in patients with endothelial dysfunctions, in particular arteriosclerosis. The present sequence represents an inducible NOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Amino acid sequence of a human inducible nitric oxide synthase (NOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gene therapy, anglogenesis; nucleic acid delivery; arteriosclerosis;
nitric oxide synthase; NOS; endothelial dysfunction.
                                  An inducible nitric oxide syntase (1NOS or AAR88464) is the product of a CDNA clone (AAT10115) derived from human hepatocytes induced for iNOS blosynthesis. The 1NOS can be obtd. by expression of the CDNA e.g. in mammallan host cells and is used in the development of selective inhibitors of NOS or to treat diseases
                                                                                                                                                                                                                                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                       Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1153;
                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                       100.0%; Score 103; DB 17;
100.0%; Pred. No. 2.7e-08;
Live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         100.0%; Score 103; DB 22;
1larity 100.0%; Pred. No. 2.7e-08;
Conservative 0; Mismatches 0;
 Disclosure; Page 54-58; 91pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                            AAB31724 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Fig 6; 37pp; English.
                                                                                                                                                                                                                                                                                                                      99EP-0202263.
99US-0143101.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-JUL-2000; 2000WO-NL00482
                                                                                                                                                                                                                                                                                                 1 GIVPFRSFWQORLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       30-APR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SFF;
                                                                                                                                                                                                                                                              Conservative
                                                                                                                               affected by nitric oxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             and induce anglogenesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Verlinden
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (INTR-) INTROGENE BV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 18; Conserval
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-123142/13.
                                                                                                                                                                   1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1153 AA;
                                                                                                                                                                                                                                             Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO200103728-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-JUL-1999;
                                                                                                                                                                                                                                                            18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Vogels R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB31724;
                                                                                                                                                                     Sequence
                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                              Matches
   8 X C C C C C C X S
                                                                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                              AAQ66914 is from human hepatocyte inducible nitric oxide synthase cDNA clone pHINOS from lambda Zap II cDNA library. The original source was induced human hepatocyte RNA. HINOS cDNA plasmid is pref. transformed in E. coll SOLK (ATCC 69126). The inventors claim a clone with the cDNA sequence in AAQ66914 and a cDNA clone which encodes AAR55764. The cloning and expression of a human tissue nitric oxide synthase cDNA provides a source of the enzyme for therapeutic purposes, for example to prevent the hypotensive shock seen with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                         cDNA clone encoding human inducible nitric oxide synthase - used to prevent the hypotensive shock seen with sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Inducible nitric oxide synthase; iNOS; hepatocyte; gene therapy; vascular occlusive disease; cancer; infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Inducible nitric oxide synthase gene - useful in gene therapy treat, e.g. vascular occlusive disease and cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Tzeng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Simmons RL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 103; DB 15;
Pred. No. 2.7e-08;
Mismatches 0;
                                                                                                                                                Simmons RL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Hepatocyte inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nussler AK,
                                                                                                                                                  Nussler AK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR88464 standard; Protein; 1153 AA
                                                                                                                                                                                                                                                                                           Disclosure; Fig 1; 53pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           93WO-US11401.
                                                                       92US-0981344.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       95WO-US07849.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          94US-0265046
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Geller DA,
                                                                                                                                                Geller DA,
                                                                                                           (UYPI-) UNIV PITTSBURGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (UYPI-) UNIV PITTSBURGH
                                                                                                                                                                               WPI; 1994-200273/24.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1996-068641/07.
N-PSDB; AAT10115.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity
tes 18; Conserv
                                                                                                                                                                                                    N-PSDB; AAQ66914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WO9600006-A1
                                  23-NOV-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      20-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          24-JUN-1994;
                                                                       25-NOV-1992;
                                                                                                                                            Billiar TR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Billiar TR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   04-JAN-1996
09-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local S:
Matches 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR88464
```

AAR884

QQ à

ö

Gaps

ò

```
WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                 Ά.
                                                                                                                                                                                                                                                                                                                                                                                              18 AA;
                                                                                                                                                                                                                                                                                                                                                                         of the invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (WEBB/) WEBBER
                                                                                                                 (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-APR-1997;
                        WO9845710-A1
                                                                   11-APR-1997;
                                                                                          07-APR-1997;
                                             15-0CT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-0CT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rattus sp.
                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                      Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW81188;
  Mus sp.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW81188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Inducible nitric oxide synthase; iNOS; murine; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                              in gene therapy for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                Use of a nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, especially useful in gene therapy for enhancing and/or inducing angiogenesis and treating atherosclerosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                    The present invention relates to use of a nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase (NOS) activity for the manufacture of a composition for essentially isolated tissue perfusion treatment to enhance and/or induce anglogenesis. The nucleic acid delivery vehicle is particularly useful in gene therapy for the treatment of atherosclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                                                                                        Nitric oxide synthase; NOS; angiogenesis; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 103; DB 22;
Pred. No. 2.7e-08;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mouse iNOS (978-995) peptide fragment.
                                                                                                                                                   Human inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                               Examples; Page 14-18; 39pp; English.
                                                                             AAB66724 standard; protein; 1153 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW81187 standard; peptide; 18 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.08;
985 givpfrsfwqqrlhdsqh 1002
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.08;
                                                                                                                                                                                                                                                                 99EP-0202263.
                                                                                                                                                                                                                                                                                       99EP-0202263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18; Conservative
                                                                                                                                                                                                                                                                                                                                     Verlinden S;
                                                                                                                                                                                                                                                                                                              (INTR-) INTROGENE BV.
                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-125729/14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1153 AA
                                                                                                                                                                                                Homo sapiens.
                                                                                                                                                                                                                     EP1067190-A1
                                                                                                                                                                                                                                                                09-JUL-1999;
                                                                                                                                                                                                                                                                                       09-JUL-1999;
                                                                                                                         09-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-APR-1999
                                                                                                                                                                                                                                           10-JAN-2001
                                                                                                                                                                                                                                                                                                                                     Vogels R,
                                                                                                     AAB66724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW81187;
                                                        6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
                                                                     AAB66724
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW81187
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                     g
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Inducible nitric oxide synthase; iNOS; rat; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This invention describes an immunoassay method where a sample with a
                                                                                                                                                                                                                                                                                                                                            Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 99; DB 19; Length 18 pred. No. 1.8e-09; 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Rat iNOS (982-998) peptide fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Page 21; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW81188 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       / Match 96.1%;
Local Similarity 94.4%;
les 17; Conservative
                                                                     97US-6667777.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97WO-US06500
97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
```

```
(MERI ) MERCK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Calaycay JR,
                                                                                                                                                                                                                                                                12-AUG-1998
                                                                                                                                                                                                                                                                                                                                                                                                          05-NOV-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                               05-NOV-1993;
                                                                                                                                                                                                                                                                                                                                                                US5766909-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                        04-FEB-1992;
                                                                                                                                                                                                                                                                                                                                                                                     16-JUN-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 17;
                                                                                                                                                                                                                                             AAW51246;
                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local S
                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                           Mus sp.
                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Matches
                                                                                                                                                                                                  RESULT 1
AAW51246
  8$$$$$$$
                                                                                                                                            à
                                                                                                                                                                  q
                                                                                                                                                                                                                                   οy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         q
                                                                                                                                                                                                                                                                                                ;
                                                                                                                specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNoS) or mimics of this protein is used to detect the presence of human iNoS protein in the sample. The method can be used for the detection and quantitation of human iNoS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide fragment from rat inoS which is used in the method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Inducible nitrogen monoxide synthase (iNOS) was isolated from mice, ar
is encoded by AAQ94252. iNOS is homodimer with a mol. wt. of 130 kDA
per subunit. The activity of INOS is independent of calmodulin and
                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                          invention describes an immunoassay method where a sample with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryotic expression vector for nitrogen-mon:oxide synthase gene useful in the treatment and prevention of diseases of blood vessels
                                             an
binding
                                                                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nitrogen monoxide synthase; inducible; treatment; prevention;
                                        Detection of human inducible nitric oxide synthase - using immunoassay in which a sample is contacted with a specific entity reactive with human inos or mimics.
                                                                                                                                                                                                                                                                          Length 18;
                                                                                                                                                                                                                                                                         Score 99; DB 19; Length 18
Pred. No. 1.8e-09;
); Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Inducible nitrogen monoxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                             AAR77360 standard; Protein; 1144 AA.
                                                                                      Disclosure; Page 21; 93pp; English
                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              restenosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Claim 5; Fig 1; 28pp; German.
                                                                                                                                                                                                                                                                         96.18;
94.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  94DE-4411402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94DE-4411402
                                                                                                                                                                                                                                                                                                                                 1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                        Query Match 96.1
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Schrader
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1995-345550/45.
N-PSDB; AAQ94252.
                     WPI; 1998-594495/50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (SCHR/) SCHRADER J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              vascular disease;
                                                                                                                                                                                                                       the invention.
                                                                                                                                                                                                                                           18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            by gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mus musculus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DE4411402-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  31-MAR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      31-MAR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                        10-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            05-0CT-1995.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Goedecke A,
 Webber R;
                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                   AAR77360;
                                                                                                        This
                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                         셤
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
cellular calcium levels. Vectors contg. the DNA are used in the treatment or prevention of vascular diseases, high blood pressure, arteriosclerosis, stenosis or restenosis of blood vessels, esp. coronary vessels after percutane transluminal coronary angioplasty. See AAR77363 and AAR77362 for endothelial and brain-derived NOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               The invention relates to two DNA molecules encoding inducible nitric oxide synthase (iNOS) proteins, where the DNA molecules comprise defined sequences of 4041 and 4165 base pairs given in the specification and the proteins have 1144 amino acids. Also claimed are expression vectors containing the DNA molecules, and recombinant host cells containing the vectors. The DNA molecules are useful for producing the recombinant proteins. The present sequence represents inducible nitric oxide, long
                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DNA encoding inducible nitric oxide synthase proteins – useful for producing recombinant proteins
                                                                                                                                                                                                                                                                                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
0
                                                                                                                                                                                                                                        Score 99; DB 16; Length 1144; Pred. No. 1.2e-07; 0; Mismatches 1; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Inducible nitric oxide synthase; iNOS; recombinant protein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 99; DB 19; Length 11
Pred. No. 1.2e-07;
); Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Inducible nitric oxide synthase, long isoform.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Xie O;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nathan CF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 1; Columns 25-32; 39pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW51246 standard; Protein; 1144 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                        96.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96.18;
94.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  93US-0841641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93US-0147812,
92US-0841641.
                                                                                                                                                                                                                                                                                                                                                                           1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mumford RA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ,1 GIVPFRSFWQQRLHDSQH 18
                                                                                                                                                                                                                                                                                            17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  & CO INC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CDNA library; isoform
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1998-361696/31.
N-PSDB; AAV07247.
                                                                                                                                                           1144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1144 AA;
                                                                                                                                                                                                                                                                      Sest Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity
```

```
achieved by blocking free radical production or the accumulation of free radicals in that cell. Treatment of insulin dependent diabetes can elitius (IDDM) can be achieved by by blocking nitric oxide (NO) production in a pancreatic beta cell and by providing a composition comprising an agent that reduces levels of fatty acids in the cells of and protects beta-cells of the subject against lipid-mediated cell death. Cells can also be protected against lipid-mediated cell catty cicity by introducing into the cell an antioxidising agent. The methods can be used for protecting cells against immunotoxicity candiated by, e. g. Ll-1 beta, IL-1 alpha, gamma IFN, Thr alpha, Thr beta, IL-8, IL-7, IL-7, IL-7, IL-7, IL-17, C. chemoattractant protein-1. The methods can be used for the treatment of e.g. insulin-dependent diabetes mellitus (IDDM), NIDDM, obesity, wasting syndromes, short stature, osteoporosis, inflammatory diseases, autoimmune diseases, or neurodegenerative diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Protection of mammalian cells against immunotoxicity or lipotoxicity - used for treating, e.g. diabetes, obesity, wasting syndromes, osteoporosis, inflammatory diseases, autoimmune diseases or neurodegenerative diseases.
                                                                                                                                          Manganese containing superoxide dismutase; MnSOD; IDDM; diabbetes mellitus; treatment; therapy; nitric oxide; NO; beta cell; fatty acid; lipotoxic; cytotoxic; cytokine; osteoporosis; inflammatory disease; autoimmune disease; neurodegenerative disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Inhibition of cytokine mediated immunotoxicity of cells can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1146;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 99; DB 20; Length 11
Pred. No. 1.2e-07;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Lee Y, Newgard CB;
, Unger RH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Page 247-251; 253pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Koyama K, Le
, Thigpen A,
AAW96322 standard; Protein; 1146 AA.
                                                                                                       Inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  96.1%;
94.4%;
                                                                                                                                                                                                                                                                                                                                           98WO-US15781
                                                                                                                                                                                                                                                                                                                                                                            98US-0055092
                                                                                                                                                                                                                                                                                                                                                                                              97US-0055092
                                                                        (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                              (BETA-) BETAGENE INC.
(TEXA ) UNIV TEXAS SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hohmeier H, K
Shimabukurom,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 96.1
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1999-153448/13.
N-PSDB; AAX08434.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 1146 AA;
                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                    W09906059-A2
                                                                                                                                                                                                                                                                                                                                         30-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                          03-MAR-1998;
30-JUL-1997;
                                                                      28-JUN-1999
                                                                                                                                                                                                                                                                                                        11-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clark SA,
Ohneda M,
                                     AAW96322;
```

/note= "in vascular iNOS, amino acid 591 is Val"

"in vascular iNOS, amino acid 721 or Leu"

/note=

'note= "in vascular iNOS, amino acid 270 is Pro'

Location/Qualifiers

Misc-difference 270 Misc-difference 349

Rattus sp.

Inducible nitric oxide synthase; iNOS; erectile dysfunction; gene therapy; penile smooth muscle cell; PSMC; impotence.

Rat inducible nitric oxide synthase.

(first entry)

23-OCT-1996

AAW02571;

AAW02571 standard; Protein; 1147 AA.

AAW02571

"in vascular iNOS, amino acid 349 is Ala or Val"

/note=

Misc-difference 591

Misc-difference 721

vascular iNOS, amino acid 1084 is Ile

"in

/note=

Misc-difference 1034

or

WO9614748-A1

23-MAY-1996.

Rajfer J;

Gonzalez-Cadavid NF,

(NIRE-) NIREC INC.

95WO-US14588

09-NOV-1995; 10-NOV-1994;

94US-0337357

"in vascular iNOS, amino acid 741 is Pro or Leu"

/note=

Misc-difference 741

```
The daming acts sequence (name), is not the factor of factor of the factor of factor of the factor of factor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Treating erectile dysfunction by increasing level of nitric oxide synthase - in penile tissue, e.g. by admin. of cDNA or enzyme inducers, also new DNA, vectors, transformed cells and enzymes
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          The amino acid sequence (AAW02571) of rat inducible nitric oxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ouery Match 96.1%; Score 99; DB 17; Length 1147; Best Local Similarity 94.4%; Pred. No. 1.2e-07; Matches 17; Conservative 0; Mismatches 1; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Claim 29; Page 37-38; 68pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1996-277317/28.
N-PSDB; AAT32655.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1147 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       vivo prodn. of NO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Seguence
```

ö

Gaps

;

a

ò

1 GIVPFRSFWQQRLHDSQH 18

Best Loca Matches

ö

Q Q

Search completed: September 10, 2001, 14:00:24 Job time: 168 sec

```
597
43.8
42
20
                                                                                                      September 10, 2001, 14:11:11 ; Search time 72.54 Seconds
(without alignments)
32.830 Million cell updates/sec
                                                                                                                                                                                                                                                                                                        425026
              GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                     Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                        425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                              Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                          OM protein - protein search, using sw model
                                                                                                                                                                                               1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                             BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                           SPTREMBL_16:*

1: Sp_archea:*
2: Sp_bacteria:*
3: Sp_fungi:*
4: Sp_human:*
5: Sp_human:*
6: Sp_nmanmal:*
7: Sp_huc:*
8: Sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_unclassified:*
sp_vertebrate:*
sp_virus:*
                                                                                                                                                          US-08-833-506C-26
                                                                                                                                                                                                                                                                                                                                     Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      sp_phage:*
sp_plant:*
sp_rodent:*
                                                                                                                                                               Title:
Perfect score:
Sequence:
                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                              Database :
                                                                                                                                                                                                                                                                          Searched:
                                                                                                       Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

Description	O94994 homo sapien	097604 canis famil		Q9u5x0 drosophila	Q9kjd8 lactococcus	Q9xdm4 salmonella	Q91r71 arabidopsis	Q99077 ustilago ho	Q9y5e0 homo sapien	Q9v706 drosophila	Q9y5h3 homo sapien	Q02932 saccharomyc	Q9nai3 caenorhabdi	Q61818 mus musculu	097276 plasmodium	Q9zsp0 oryza sativ	Q9kud0 vibrio chol	Q17845 caenorhabdi	Q94181 caenorhabdi
ID	094994	097604	Q9V4I9	0805X0	Q9KJD8	Q9XDM4	Q9LR71	099077	Q9Y5E0	09V706	09т5н3	002932	Q9NAI3	061818	097276	Q92SP0	09KUD0	017845	094181
DB	4	9	2	S	7	~	10	٣	4	Ŋ	4	٣	Ŋ	11	2	10	~	ស	ഗ
% Query Match Length DB	1114	1154	1268	1299	196	300	447	647	850	856	936	1032	1801	1840	1281	186	264	387	395
% Query Match	100.0	46.4	45.8	45.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.8	44.3	43.8	43.8	43.8	43.8
Score	96	44.5	44	44	43	43	43	43	43	43	43	43	43	43	42.5	42	42	42	42
Result No.	-	7	æ	4	ហ	9	7	8	σ	10	11	12	13	14	15	16	17	18	19

2 43.8 597 2 09 5 43.2 1147 11 0 5 43.2 1147 11 0 1 42.7 356 2 09 1 42.7 356 2 09 1 42.7 400 4 09 1 42.7 400 4 09 1 42.7 400 4 09 1 42.7 400 4 09 1 42.7 190 3 09 1 42.7 190 5 09 1 42.7 190 5 09 1 42.7 190 5 09 1 41.7 348 4 09 1 41.7 348 2 09 1 41.7 348 4 09 1 41.7 359 2 09 1 41.7 359 2 09 1 41.7 559 2 09 1 41.7 559 2 09 1 41.7 539 2 09 1 41.7 542 2 09 1 41.7 549 2 09 1 41.7 648 4 09 1 10.6 69 1 10.6 69	09k9c2 bacillus ha 09t0w4 rattus norv 09qw28 rattus sp. 09c441 gallus gall 09zbk7 pasteurella 09zbk7 drosophila 015298 homo sapien 09h29 homo sapien 09h29 homo sapien 09h29 homo sapien 09lx21 arabidopsis 012252 saccharomyc 096127 plasmodium 09vrw3 drosophila 09vrw3 drosophila 014025 homo sapien 074025 homo sapien 078391 homo sapien 078392 homo sapien 078392 homo sapien 078392 homo sapien 078392 homo sapien 09t66 streptomyce 034427 arabidopsis 09c66 streptomyce 034427 bacillus su 095c66 streptomyce 034427 homo sapien	ENTS	PRT; 1114 AA. eated) ist sequence update) ist annotation update) is. Craniata; Vertebrata; Euteleostomi; Catarrhini; Hominidae; Homo. I., Ida M.; of a novel splice valiant of human ie."; iBL/GenBank/DDBJ databases. iBL/GenBank/DDBJ databases. Score 96; DB 4; Length 1114;
20 42 43.8 597 2 09 21 41.5 43.2 1147 11 0 23 41.5 43.2 1147 11 0 24 41.5 43.2 1147 11 0 25 41 42.7 387 5 09 26 41 42.7 387 5 09 28 41 42.7 387 5 09 29 41 42.7 387 5 09 31 41 42.7 400 4 09 31 41 42.7 1991 3 01 31 41 42.7 1992 5 09 33 41 42.7 1992 5 09 34 40 41.7 350 4 P 35 40 41.7 350 8 02 40 41.7 350 8 02 41 42.7 1992 5 09 42 40 41.7 350 8 02 43 40 41.7 350 8 02 44 40 41.7 539 2 09 45 40 41.7 539 2 09 46 40 41.7 539 2 09 47 40 41.7 539 2 09 48 40 41.7 539 2 09 49 40 41.7 539 2 09 40 41.7 539 2 09 41 40 41.7 539 2 09 42 40 41.7 539 2 09 43 40 41.7 539 2 09 44 40 41.7 539 2 09 45 40 41.7 539 2 09 46 40 41.7 539 2 09 47 40 41.7 539 2 09 48 40 41.7 539 2 09 48 40 41.7 539 2 09 49 40 41.7 539 2 09 40 40 41.7 539 2 09 41 40 41.7 539 2 09 42 40 41.7 539 2 09 43 40 41.7 539 2 09 44 40 41.7 539 2 09 45 40 41.7 539 2 09 46 40 41.7 539 2 09 47 40 41.7 539 2 09 48 40 41.7 539 2 09 48 40 41.7 539 2 09 49 50 60 60 60 60 60 60 60 60 60 60 60 60 60	99C2 90C2	ALIGNMENTS	PRT; 1114 eated) st sequence st annotat; E. Craniata; \ Catarrhini; of a nove; e."; bL/GenBank; ; ClF9624; Score 96;
20 42 43.8 59 21 41.5 43.2 114 22 41.5 43.2 114 23 41.5 43.2 114 24 41.5 43.2 114 25 41 42.7 38 26 41 42.7 38 27 41 42.7 38 28 41 42.7 40 29 41 42.7 96 31 41 42.7 96 31 41 42.7 96 31 41 42.7 99 32 41 42.7 130 33 4 40 41.7 35 34 40 41.7 35 36 40 41.7 35 37 40 41.7 35 38 40 41.7 55 40 41.7 7 40 40 41.7 7 40 41.			THASS (CTC THASS) CLOS (CTC) CTC (CTC) CCC (CT
20 42 43.8 59 21 41.5 43.2 114 22 41.5 43.2 114 23 41.5 43.2 114 24 41.5 43.2 114 25 41 42.7 38 26 41 42.7 38 27 41 42.7 38 28 41 42.7 40 29 41 42.7 96 31 41 42.7 96 31 41 42.7 96 31 41 42.7 99 32 41 42.7 130 33 4 40 41.7 35 34 40 41.7 35 36 40 41.7 35 37 40 41.7 35 38 40 41.7 55 40 41.7 7 40 40 41.7 7 40 41.			; 100 100 115 115 115 115 1109 1109 1000
000 000 000 000 000 000 000 000 000 00	74411 74411 74411 74410 74		MINARY SLrel. SLrel. SLrel. An) Cho An D
000 000 000 000 000 000 000 000 000 00			Trem (Trem (Trem (Trem (Trem (Trem (Trem (Trem (Trem (Trem (Sob (Sob (Sob (Sob (Sob (Sob (Sob (Sob
000 000 000 000 000 000 000 000 000 00			Popularian
000 000 000 000 000 000 000 000 000 00	d · · dddddddddddddddddddddddddd		SULT 1 4994 094994 094994 01-MAY-19 02-MAT-19 03-MAT-19
S S S S S S S S S S S S S S S S S S S	01000000000000000000000000000000000000		ULT 100994 1009994 1009994 10099994 10099999 1009999 10099
			0948 010 0948 010 097 010 098 010 0

Query Match 100.0%; Score 96; DB 4; Length 1114; Best Local Similarity 100.0%; Pred. No. 6.3e-08; Matches 18; Conservative 0; Mismatches 0; Indels' οy

ö

Gaps

ô

g

RESULT

~

```
PK OR CG11084
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CNC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9U5X0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09U5X0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D.,
Adamstides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.E.,
Ananatides P.G., Scherer S.E., Li P.W., Hoskins R.A., Galle R.E.,
George R.A., Lewis S.E., Richards S., Ashburner M., Honderson S.N.,
Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
A briton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X.,
A briton G.G., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G.,
Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D.,
A ballew R.M., Basu A., Berman B.P., Bhandari D., Bolshakov S.,
A Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottler P.,
Burtis K.C., Busam D.A., Butler H., Cadleu E., Center A., Chandra I.,
A Cherry J.M., Cawley S., Dahlke C., Davenport L.B., Davis S.M.,
A Podson K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAY-2000 (TrEMBLrel. 16, Last annotation update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
pk OR CG11084.
Drosophila melanogaster (Fruit fly).
Bukaryota: Medrazoa, Arthropoda; Tracheata; Hexapoda; Insecta;
Pteryota; Medrazoa, Arthropoda; Tracheata; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                             MEDLINE-98431941; PubMed-9746458; Wang X., McGregor C.C.A., Miller V.M.; Induction and cDNA sequence of inductible nitric oxide synthase from canine aortic smooth muscle cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                    Canis familiaris (Dog).
Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Carnivora, Fissipedia, Canidae, Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6; Length 1154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       42CD606E447254CB CRC64;
                                                              01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 46.4%; Score 44.5; DB 57.9%; Pred. No. 40; iive 2; Mismatches
                       PRT; 1154 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT; 1268 AA
                                                                                                                                                                                                                                                                                                                                                                                                        Am. J. Physiol. 275:H1122-H1129(1998).
EMBL; AF077821; AAC78630.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1154 AA; 131709 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRIWTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 SPVTQDDL---QYHNLSKQ 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 46.4
Best Local Similarity 57.9
Matches 11; Conservative
                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  HSSP; P29477; INOS.
InterPro; IPR001094; -.
InterPro; IPR001433; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR003097
                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                          NCBI_TaxID-9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                             TISSUE -- AORTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9V4I9;
                       097604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9V4I9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT 109 V4 L19 V4 L1
097604
                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
```

```
A Durbin K.J., Evangelista C.C., Ferraz C., Ferrlera S., Fleischmann W., Godek A., Gong F., Gorell J.H., Gu Z., Gelbart W.M., Glasser K., A Glodek A., Gong F., Gorrell J.H., Gu Z., Gelna P., Harris M., Harrey D., Helman T.J., Hernandez J.R., Houck J., A Harris N.L., Harrey D., Helman T.J., Well M.-H., Ibegwam C., A Jalal M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., Kimmer B.E., Kodira C.D., Kraft C., Kravitz S., Kulp D., Lai Z., Liang Y., Lin X., Mattei B., McIntosh T.C., McIecod M.P., McDherson D., Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A., Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A., Merkulov G., Milshina N.V., Mobarry C., Morris J., Moshrefi A., Ra Merkulov G., Mison K., Nixon K., Nusskern D.R., Pacleo J., Moshrefi A., Ra Balazolo M., Pittman G.S., Pan S., Pollard J., Puri V., Reese M.G., Reinert K., Remington K.B., Nixon K., Nusskern D.R., Sande H., Shen H., Spier E., Siden Kiamos I., Simpson M., Skupski M.P., Sinh T., Shen H., Wang X., Shue B.C., Siden Kiamos I., Simpson M., Strong R., Sun E., Spradling A.C., Stapleton M., Strong R., Sun E., Mosarman D.A., Weinstock G.M., Weissenbach J., Moodage T., Worley K.C., Wu D., Yang S., Yao Q.A., Ra Ye J., Yeh R.-F., Zaveri J.S., Zhan M., Zhang G., Zhen S., Zhu X., Smith H.O., A Leinez B.W., Myers E.W., Rubin G.M., Venter J.C.; Rang S., Zhu X., Smith H.O., Chence Legicone Sequence of Drosophila melanogaster., Struck C., Packer B., Chence L., The Collect L., Changer B., Wang S., Wang S., The Collect C., Changer B., Wender S., Chu X., Smith B., Chence L., 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta; Pteryyota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha; Ephydroidea; Drosophilidae; Drosophilae; NCBL_Tax1D=7227;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -1- SIMILARITY: CONTAINS LIM DOMAIN(S). THE LIM DOMAIN BINDS 2 ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.

SEQUENCE FROM N.A.

MEDLINE-99415814; Pubmed-10485852;

Gubb D., Green C., Huen D., Coulson D., Johnson G., Tree D.,

Collier S., Roote J.;

The balance between isoforms of the Prickle LIM domain protein is critical for planar polarity in Drosophila imaginal discs.";

Genes Dev. 13:2315-2327(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1268;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMART; SM00132; LIM; 1.
LIM motif; Metal-binding; Zinc.
SEQUENCE 1268 AA; 137228 MW; AC4F9615A7C18C9E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT; 1299 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 44; DB
Pred. No. 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAR-2001 (TrEMBLrel. 16, Last seq
01.MAR-2001 (TrEMBLrel. 16, Last and
PRICKLE SPLE ISOFORM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Drosophila melanogaster (Fruit fly).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ٦
غ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  45.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; AE003842; AAF59281.1;
HSSP; P04006; 11ML.
FlyBase; FBgn0003090; pk.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |:| |||: ||| :|
292 PLTAGDLQFLNLSLRQ 307
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 PVTQDDLQYHNLSKQQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
```

ö

```
Submitted (NOV-1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        300 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
       FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN=LT2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=LT2;
                                                                                                                                                                                  typhimurium
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ecker J.R.;
                                                                                                                                                                                                                                                                                                                                         STRAIN-LT2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9LR71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ecker
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT 7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9LR71
       REPRETATION OF SECTION OF SECTION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Firmicutes; Bacillus/Clostridium group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kearney K., Fitzgerald G.F., "The Complete Sequence of pC1305 from Lactococcus lactis UC317."; Submitted (AUG-1999) to the EMBL/GenBank/DDBJ databases. EMBL; AF179848; AAF86686.1; -...InterPro; IPR002104; -...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Salmonella enterica subsp. enterica serovar Typhimurium.
Bacteria; Proteobacteria; gamma subdivision; Enterobacteriaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-MR-2001 (TrEMBLrel. 16, Last annotation update)
01-MRPOTHETICAL 22.5 KDA PROTEIN.
Lactococcus lactis (subsp. lactis) (Streptococcus lactis).
Plasmid pc1305.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 1299
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 196;
                                                                                                                                                                                                                                                                                                                          Prodom; PD000094; -; 2.
PROSTIE; PS50023; LIM_DOMAIN_2; 3.
PROSTIE: PS00028; ZINC_FINGER_C2H2; UNKNOWN_1.
SEQUENCE 1299 Aa: 140529 MW; 3D6D3A31717BE7DE CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Indels
                                                                                                             EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam: PF00589; Phage_integrase; 1.
Hypothetical protein; Plasmid.
SEQUENCE 196 AA; 22546 MW; E569B00EE3F7D467 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 44; DB 5;
Pred. No. 55;
3; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                196 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          300 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 43; DB
Pred. No. 12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      45.8%;
56.2%;
                                                                                                          Submitted (JAN-2001) to the EMBL; AJ24310; CAB57345.3; FlyBase; FB900003090; pk. InterPro; IPR000822; InterPro; IPR001781; InterPro; IPR01781; Int
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-NOV-1999 (TrEMBLrel. 12, 01-NOV-1999 (TrEMBLrel. 12, 01-MAR-2001 (TrEMBLrel. 16,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      || || : ||: |||
85 PVQQDLMLYHDWLVQQN 101
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 PVTQDDLQYHNLSKQQN 18
SEQUENCE FROM N.A.
STRAIN=ISOGENIC DP CN BW;
Gubb D.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity 56.2
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 PVTQDDLQYHNLSKQQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                            Pfam; PF00412; LIM; 2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A. STRAIN-UC317;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Salmonella.
NCBI_TaxID=90371;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NCBI_TaxID=1360;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Lactococcus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9KJD8
Q9KJD8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9XDM4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9XDM4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PDUX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PDUX.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AC OCC OCK RAP REPRETED BY THE REPRETED BY THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 a
```

```
Bobik T.A., Xu Y., Jeter R.M., Otto K.E., Roth J.R.;
"Propanediol utilization genes (pdu) of Salmonella typhimurium: three genes for the propanediol dehydratase.";
J. Bacteriol. 179:6633-66319-6911997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
Khan S., Brooks S., Buehler E., Chao Q., Johnson-Hopson C., Kim C.,
Shinn P., Altafi H., Bei Q., Chin C., Chlou J., Choi E., Conn L.,
Conway A., Gonzales A., Hansen N., Howing B., Koo T., Lam B., Lee J.,
Lenz C., Li J., Liu A., Liu K., Liu S., Mukharsky N., Nguyen M.,
Palm C., Pham P., Sakano H., Schwartz J., Southwick A., Thaveri A.,
Toriumi M., Vaysberg M., Yu G., Federspiel N.A., Theologis A.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          "Genomic sequence for Arabidopsis thaliana BAC F21B7 from chromosome
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Bobik T.A., Busch R.J., Havemann G.D., Williams D.S., Aldrich H.C.; Submitted (JUN-1999) to the EMBL/GenBank/DDbJ databases.
EMBL, AF026270; AAD39022.1; -.
InterPro; IPR000888; -.
Probom; PD001462; -; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta; Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II; Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 300;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 7; Indels
                                                                Chen P., Andersson D.I., Roth J.R.; "The control region of the pdu/cob regulon in Salmonella typhimurium.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ecker J.R.,; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bobik T.A., Xu Y., Jeter R.M., Otto K.E., Roth J.R.; Submitted (SEP-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Submitted (OCT-1997) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     32786 MW; 18CB37B92A50856B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
F21B7.14.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;;
(7)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 43; DB 2
Pred. No. 18;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                447 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Arabidopsis thaliana (Mouse-ear cress).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                           Bacteriol. 176:5474-5482(1994).
STRAIN=LT2;
MEDLINE=94350831; PubMed=8071226;
                                                                                                                                                                                                                                                                                        MEDLINE-98012959; PubMed-9352910;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 52.9%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 SPVTQDDLQYHNLSKQQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRELIMINARY;
```

ö

850 AA

4

```
InterPro; IPR002126; -.
Pfam; PF00028; cadherin; 6.
PRINTS; PR00205; CADHERIN.
PROSITE; PS00232; CADHERIN; 5.
SWART; SW00112; CA, 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 38.5%;
Matches 10; Conservative
379 SPFTSDNVNLSNVSQQQ 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Cell
                                                                                                                                                                                                              PCDH-GAMMA-A10.
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              850 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A. STRAIN-BERKELEY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Calcium-binding;
SEQUENCE 850 A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CG13942 PROTEIN.
                                                                                                                                                                                                                                                                                        NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-2000
                                                                                                                 Q9Y5E0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9V706;
                                                                                            09Y5E0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   907V6Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            10
                                                      RESULT
Q9Y5E0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
Q9V706
qq
                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .;
0
                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.

Cheuk R., Shinn P., Brooks S., Buehler E., Chao Q., Johnson-Hopson C.,
Khan S., Kim C., Altafi H., Bei B., Chin C., Chiou J., Choi E.,
Conn L., Conway A., Gonzalez A., Hansen N., Howing B., Koo T.,
Lee J., Lenz C., Li J., Liu A., Liu J., Liu S., Mukharsky N.,
Nuyen M., Palm C., Pham P., Sakano H., Schwartz J., Southwick A.,
Theologis A., Ecker J.,
Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AC002260; AAF86534.I.
EMBL, AC002260; AAF86534.I.
EMBL, AC002260; AAF86534.I.
          Cheuk R., Shinn P., Brooks S., Buehler E., Chao Q., Johnson-Hopson C., Rhan S., Kim C., Altaff H., Bel B., Chlan C., Chlou J., Chol E., Conn L., Conway A., Gonzalez A., Hansen N., Howing B., Koo T., Lam B., Lee J., Lenz C., Li J., Liu A., Liu J., Liu S., Mukharsky N., Nguyen M., Palm C., Pham P., Sakano H., Schwartz J., Southwick A., Thaveri A., Toriumi M., Vaysberg M., Yu G., Davis R., Federspiel N., Theologis A., Ecker J.; Submitted (JUN-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bakkeren G., Kronstad J.W.;
Conservation of the b mating-type gene complex among bipolar and tetrapolar smut fungi.;
Plant Cell 5:123-136(1992).
EMBL; Z18531; CAST9217.1;
Mendel; 20793; Ustho; 3147; 20793.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Fungl; Basidiomycota; Ustilaginomycetes;
Ustilaginomycetidae; Ustilaginales; Ustilaginaceae; Ustilago.
NCBI_TaxID=120017;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 43; DB 10; Length 447;
Pred. No. 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 44.8%; Score 43; DB 3; Length 647; Best Local Similarity 47.1%; Pred, No. 40; Matches 8; Conservative 4; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4; Indels
                                                                                                                                                                                                                              Ecker J.R.;
Submitted (JUL-2000) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SMART; SM00389; HOX; 1.
SEQUENCE 647 AA; 70800 MW; 6BF38C5F5493026F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           647 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-UH100 (MAT-2, ADE);
MEDLINE-93177212; PubMed-8439742;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00046; homeobox; 1. PROSITE; PS50071; HOMEOBOX_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ustilago horde1 (Smut fungus).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity 61.1%;
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01, 01-MAR-2001 (TrEMBLrel. 16, UHBWZ GENE AND UHBEZ GENE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3 VTQDDLQY -- HNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 SPVTQDDLQYHNLSKQQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PRELIMINARY;
                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         099077
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       œ
```

RESULT Q99077

OCC COLOR BY A COLOR B

ò

g

ð

```
Drosopila melanogaster (Fruit fly).
Eukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pteryota; Neoptera; Endopterygota; Diptera; Brachycera; Muscomorpha;
Ephydroidea; Drosophilidae; Drosophila.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Adams M.D., Celniker S.E., Holt R.A., Evans C.A., Gocayne J.D., Adams M.D., Celniker S.E., Holt R.A., Hoskins R.A., Galle R.F., George R.A., Lewis S.E., Richards S., Ashburner M., Henderson S.N., Sutton G.G., Wortman J.R., Yandell M.D., Zhang Q., Chen L.X., Brandon R.C., Rogers Y.+H.C., Blazej R.G., Champe M., Pfeliffer B.D., Wan K.H., Doyle C., Baxter E.G., Helt G., Nelson C.R., Miklos G.L.G., Abril J.F., Agbayani A., An H.-J., Andrews-Pfannkoch C., Baldwin D., Ballew R.M., Basu A., Baxendale J., Bayrakteroglu L., Beasley E.M., Beeson K.Y., Benos P.V., Berman B.P., Bhandari D., Bolshakov S., Borkova D., Botchan M.R., Bouck J., Brokstein P., Brottier P.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                      [1]
SEQUENCE FROM N.A.
MEDLINE-99308636; PubMed-10380929;
Wu O., Maniatis T.;
"A striking organization of a large family of human neural cadherin-like cell adhesion genes.";
Cell 97:779-790(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11 adhesion; Glycoprotein; Repeat; Transmembrane.
92942 MW; 1F5489040E08FBC6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                       -1- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN (BY SIMILARITY).
-1- SIMILARITY: TO THE CADHERIN FAMILY.
EMBL; AF152503: AAD43764.1; -.
HSSP; P15116; INCJ.
                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ..
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 850
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5; Indels
01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
PROTOCADHERIN GAMMA A10 SHORT FORM PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (TrEMBLrel. 13, Created)
(TrEMBLrel. 13, Last sequence update)
(TrEMBLrel. 14, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 4;
52;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 856 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 SPVTQDD-----LQYHNLSKQQN 18
```

1;

;

```
RA Burtis K.C., Busam D.A., Butler H., Cadieu E., Center A., Chandra I., de Perry J.M., Cawley S., Dahlke C., Davenport L.B., Davies P., Anderblos B., Delcher A., Deng Z., Mays A.D., Dew I., Dietz S.M., Anderbor K., Doup L.E., Downes M., Dugan-Rocha S., Dunkov B.C., Dunn P., Burbin K.J., Evangelista C.C., Ferraz C., Ferriera S., Fleischmann W., R. Fostar C., Gabriellan A.E., Garg N.S., Gelbart W.M., Glasser K., R. Houtch B.E., Gargen T.J., Wei M.-H., Ibegwam C., Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., Jalali M., Kalush F., Karpen G.H., Ke Z., Kennison J.A., Ketchum K.A., Jalali M., Kalush F., Karpen G.H., Ke Z., Ling M., Ketchum K.A., Lu X., Mattei B., McIntosh T.C., McLeod M.P., Moshrefi A., R., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L., R. A., Moy M., Murphy B., Murphy L., Muzny D.M., Nelson D.L., R. A., Moy M., Murphy B., Murphy L., Musskern D.R., Pacler K., Stennigton K., Saunders R.D.C., Scheeler F., Shen H., R. Shier E., Spradling A.C., Stapleton M., Strong R., Sun E., Spradling A.C., Stapleton M., Strong R., Sun E., Spradling A.C., Stapleton M., Strong R., Sun S., Walliams S.M., Woodage T., Worley K.C., Wu D., Yang S., Yao Q.A., Walliams S.M., Woodage T., Worley K.C., Zhao M., Zhao G., Zhao G., Zhao G., Zhao G., Zhao K., Zhao X., 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Wu Q., Maniatis T.;
"A striking organization of a large family of human neural cadherin-
the cell adhesion genes.";
Cell 97:779-790(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -:- SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN (BY SIMILARITY).
-:- SIMILARITY: TO THE CADHERIN FAMILY.
EMBL; ART52319; AAD43713.1; -.
HSSP; P15116; 1NCJ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 43; DB 5; Length 856;
Pred. No. 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                93777 MW; 3B6C3F80DFEA12B7 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      936 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-BRAIN;
MEDLINE-99308636; PubMed-10380929;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRINTS; PR01217; PRICHEXTENSN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR002126; -.
Pfam; PF00028; cadherin; 6.
PRINTS; PR00205; CADHERIN.
PROSITE; PS00232; CADHERIN; 5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             FlyBase; FBgn0033922; CG13942.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    44.8%;
61.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1999 (TrEMBLrel. 12, 01-NOV-1999 (TrEMBLrel. 12, 01-MAR-2001 (TrEMBLrel. 16, PROTOCADHERIN GAMMA A10.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 61.5
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AE003815; AAF58260
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    8 QDDLPHHNSSSQ 20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5 QDDLQYHNLSKQQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PCDH-GAMMA-A10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       InterPro;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9Y5H3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      09Y5H3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
```

```
NEDLINE-97313271; PubMed-9169875;

MEDLINE-97313271; PubMed-9169875;

MEDLINE-97313271; PubMed-9169875;

MEDLINE-97313271; PubMed-9169875;

MEDLINE-97313271; PubMed-9169875;

MEDLINE R., Aparicio A., Barrell B., Badcock K., Benes V., Botstein D., A Caraujo R., Aparicio A., Barrell B., Badcock K., Benes V., Botstein D., A Churcher C., Coster F., Davis K., Davis K., Davis K., Duncan M., Floeth M., A Delius H., DiPaolo T., Dubois E., Dusterhoft A., Duncan M., Floeth M., A Delius H., DiPaolo T., Lunicer B., Hall J., Hebling U., RA Heumann K., Hilbert H., Hiller L., Hunice-Smith S., Maran R., RA Johnston M., Kalman S., Kleine K., Komp C., Kurdi O., Lashkari D., RA Lew H., Lin A., Lin D., Louis E.J., Marathe R., Messenguy F., Messenguy F., Messenguy F., Morelle D., Muller-Auer S., Namath A., RA Nentwich U., Oefner P., Pearson D., Petel F.X., Pohl T.M., RA Purnelle D., Schafer M., Scharfe M., Scherens B., Schramm S., RA Schroeder M., Scharfe M., Urrestarazu L.A., Ushinsky S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
MEDLINE-85054621; PubMed-6094498;
MEDLINE-85054621; PubMed-6094498;
Sumrada R.A., Cooper T.G.;
"Nucleotide sequence of the Saccharomyces cerevisiae arginase gene
"CAR1) and its transcription under various physiological conditions.";
J. Bacteriol. 160:1078-1087(1984).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE=90037056; PubMed=2681212;
Anderson M.S., Muchlbacher M., Street I.P., Proffitt J., Poulter C.D.;
"Isopentenyl diphosphate:dimethylallyl diphosphate isomerase. An
improved purification of the enzyme and isolation of the gene from
Saccharomyces cerevisiae.";
SMART; SM00112; CA; 1.
Calcium-binding; Cell adhesion; Glycoprotein; Repeat; Transmembrane.
SEQUENCE 936 AA; 101445 MW; 5F614F1934D5DC61 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Jamieson D.J., Beggs J.D.;
"A suppressor of yeast spp81/dedl mutations encodes a very similar
putative ATP-dependent RNA helicase.";
Mol. Microbiol. 5:805-812(1991).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDINE-94131990; PubMed-8300560;
Zheng Y., Cerione R., Bender A.;
"Control of the yeast bud-site assembly GTPase Cdc42. Catalysis of
guanine nucleotide exchange by Cdc24 and stimulation of GTPase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                            8
                                                                                                       Length 936;
                                                                                                                                                                                                                                                                                                                                                                                      Last sequence update)
Last annotation update)
                                                                                                     DB 4;
                                                                                                                                                                                                                                                                                                                               PRT; 1032 AA
                                                                                                                                          3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Saccharomyces cerevisiae (Baker's yeast).
                                                                                                     44.8%; Score 43; 38.5%; Pred. No. 5
                                                                                                                       Pred. No
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Biol. Chem. 264:19169-19175(1989)
                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                            358 SPVTEDSPLGTVVALLNVHDLDSEQN 383
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biol. Chem. 269:2369-2372(1994).
                                                                                                                                                                                  1 SPVTQDD-----LQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE=91312117; Pubmed=1857205;
                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01, 01-MAR-2001 (TrEMBLrel. 16,
                                                                                                                       Best Local Similarity 38.5
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                               PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               activity by Bem3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                   LPH2W OR KAP120
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=4932
                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                             002932
                                                                                                                                                                                                                                                                                                                                                  002932
                                                                                                                                                                                                                                                                                       12
                                                                                                                                                                                                                                                                                     RESULT
Q02932
                                                                                                                                                                                                                                                                                                                                                  q
    SO SO
                                                                                                                                                                                       ò
```

9

ö

Gaps

ö

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-96078271; PubMed-7476016; Inal Y., Suzukl Y., Mataul T., Chyama M., Wanaka A., Takagi T.; "Cloning of a retinoic acid-induced gene, GTI, in the embryonal carcinoma cell line P19: neuron-specific expression in the mouse
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44.3%; Score 42.5; DB 5; Length 1281;
47.6%; Pred. No. 97;
tive 4; Mismatches 4; Indels 3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 43; DB 11; Length 1840; Pred. No. 1.2e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plasmodium falciparum (isolate 3D7).
Eukaryota: Alveolata; Apicomplexa; Haemosporida; Plasmodium.
NCBI_TaxID⇔36329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bownis, S., Skelton J., Churcher C., Lawson D., Quail M., Submitted (FEB-1999) to the EMBL/GenBank/DDBJ databases. EMBL; AL034556; CAB38987.1; -. SEQUENCE 1281 AA; 157708 MW; D071C4573BE4C7DE CRC64;
     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Hypothetical protein.
SEQUENCE 1840 AA; 196040 MW; A02781CBE26FEBCA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4; Indels
                                                                                                                                                                                                        01-NOV-1996 (TrEMBLrel. 01, Created)
01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
     2
                                                                                                                                                                       PRT; 1840 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1281 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Brain Res. Mol. Brain Res. 31:1-9(1995).
EMBL; D29801; BAA06184.1; -.
MGD; MGI:103291; Rail.
     5;
                                                                                                                                                                                                                                                              HYPOTHETICAL 196.0 KDA PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   86 SPDEVDNIQYGNITKMNTQQN 106
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SPVTQDDLQYHNLSK---QQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        44.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 53.3
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           10; Conservative
     Conservative
                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11: | | ||:| |:
282 TQETLHYQNLAKYQH 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4 TODDLOYHNLSKOON 18
                                                             | |:| |:||||
| 598 DKLRYKNISKQQ 609
                                        6 DDLQYHNLSKQQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PFC0650W PROTEIN.
PFC0650W.
                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE-BRAIN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-3D7;
     .,
8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           brain.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             097276
                                                                                                                                                                     061818
                                                                                                                                                                                           061818;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
097276
                                                                                                                                   14
     Matches
                                          ò
                                                                         qq
                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                д
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ó:
                                                      "The nucleotide sequence of Saccharomyces cerevisiae chromosome XVI."; Nature 387:0-0(0).
Vierendeels F., Vissers S., Voss H., Walsh S.V., Wambutt R., Wang Y., Wedler E., Wedler H., Winnett E., Zhong W.W., Zollner A., Vo D.H.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                     SEQUENCE FROM N.A. Hussey H., Fortin N., Friesen J.D., Storms R.K., Valall J., Ahmed A., Bussey H., Fortin N., Friesen J.D., Storms R.K., Vo D.H., Wang Y., Winnett E.; Submitted (JAN-1996) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DB 3; Length 1032;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 43; DB 5; Length 1801;
Pred. No. 1.1e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              'Genome sequence of the nematode C.elegans: A platform for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          205015 MW; 8478250B0C6F5072 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                Jia Y., Cherry J.M.;
Submitted (SEP-1997) to the EMBL/GenBank/DDBJ databases.
EMBL; U43503; AAB68237.1; -
SGD; SO006046; KAP120.
INCERPCO; IRRO1494; -
SEQUENCE 1032 AA; 119621 MW; 493EDA2B43298F10 CRC64;
                                                                                                            SEQUENCE FROM N.A. Schlenstedt G., Silver P.A.; Submitted (JAN-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
Weber L., Byers B.E.;
Submitted (JAN-1996) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Smye R.;
Submitted (OCT-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                            Submitted (DEC-1995) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT; 1801 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 43; DB :
Pred. No. 64;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
MEDLINE-99069613; PubMed-9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                investigating biology.";
Science 282:2012-2018(1998).
EMBL; ALO32634; CAB54418.1; -.
InterPro; IPRO02965; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PR01217; PRICHEXTENSN.
E 1801 AA; 205015 MW
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                44.88;
66.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 41.2%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-0CT-2000 (TrEMBLrel. 15, 01-0CT-2000 (TrEMBLrel. 15, 01-MAR-2001 (TrEMBLrel. 16, Y39G8C, B PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 PVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                              Bussey H.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro;
PRINTS; PR
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9NAI3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9NAI3
```

å a

ö

Gaps

ö

Ĥ

Gaps

ë.

Barrell B.;

Search completed: September 10, 2001, 14:11:12 Job time: 591 sec

This Page Blant (uspto)

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM protein - protein search, using sw model

September 10, 2001, 14:09:51 Run on:

; Search time 23.82 Seconds (without alignments) 25.886 Million cell updates/sec

US-08-833-506C-26 96 1 SPVTQDDLQYHNLSKQQN 18 Title: Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

93435 seqs, 34255486 residues Searched:

93435 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_39:* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	P35228 homo sapien	macac	P71366 haemophilus	P34562 caenorhabdi	Q9zep8 pseudomonas	P43011 haemophilus	P08790 candida tro	P57316 buchnera ap	8	O60591 homo sapien	P03513 bunyavirus	085298 buchnera ap	P47708 mus musculu	P39081 saccharomyc	P47709 rattus norv		-	_	sacch	homo	рошо	s sns	P30572 candida alb		-	٠.	P12921 bacillus su	P32677 escherichia	Q64689 mus musculu	P70326 mus musculu	7	9849	Q05086 homo sapien
SUMMARIES	OI.	NS2A_HUMAN	NOS2_MACMU	T3MH_HAEIN	YNP9_CAEEL	PANB_PSEFL	YHCS_HAEIN	CAO1_CANTR	MURE_BUCAI	NOS2_RAT	NS2D_HUMAN	NCAP_BUNSH	MURE_BUCAP	RP3A_MOUSE	PC11_YEAST	RP3A_RAT	NOS2_CAVPO	MDR5_DROME	GP48_BPSP1	CLG1_YEAST	ZF37_HUMAN	MYB_HUMAN	PEC1_PIG	CHS2_CANAL	SP23_YEAST	NOS2_CHICK	YG1K_YEAST	TMRB_BACSU	YIJO_ECOLI	CAGD_MOUSE	TBX5_MOUSE	DPO1_LACLC	LPH_RABIT	UE3A_HUMAN
	DB	-	-4	Н	Н	-		-		Н		Н	Н	Н	-		٦	m	7	Ч	٦	Н	Н	-	7	Н	П		-	~	Н	Н	Н	-
	Query Match Length	1153	162	629	705	366	288	661	497	1147	1147	235	292	909	626	684	1149	1302	126	452	597	640	740	1009	1082	1136	158	197	283	380	518	877	ā	875
dР	Query	· -•	4	9	46.9	45.8	44.8	43.8	43.2	43.2	43.2	~	2	ς.			2	42.7	41.7	41.7	41.7	41.7	41.7	ч	41.7	41.7	。	40.6		•	ö	ö	40.6	40.1
	Score	96	81	45		44	43	4	41.5		41.5	41	41	41	41	41	41	41	40	40	40	40	40	40	40	40	39	39	39	39	39	39	39	38.5
	Result No.	-	7	e	4	2	9	7	89	6	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29	30	31	32	33

098462 spirogyra m	Q9wxi6 buchnera ap	Q02510 staphylococ	P39695 bacillus su	P76655 escherichia	O08759 mus musculu	013776 schizosacch	O15164 homo sapien	P40453 saccharomyc	Q12674 saccharomyc
RPOA_SPIMX	PT1_BUCAI	LIP_STAEP	CME3_BACSU	YQIG_ECOLI	UE3A_MOUSE	YE9G_SCHPO	TF1A_HUMAN	UBP7_YEAST	ATC8_YEAST
٦,				П	П	Н	Н	H	П
344	571	688	776	821	882	925	1046	1071	1656
39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6	39.6
38	38	38	38	38	38	38	38	38	38
34	36	37	9 6	40	41	42	43	44	45

ALIGNMENTS

2

N

```
"Structural characterization of nitric oxide synthase isoforms reveals striking active-site conservation."; Nat. Struct. Biol. 6:233-242(199).

-i - FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              "Crystal structures of zinc-free and -bound heme domain of human inducible nitric-oxide synthase. Implications for dimer stability and comparison with endothelial nitric-oxide synthase.";
                                                                                                                                                                     Guo F.H., de Raeve R.H., Rice T.W., Stuehr D.J., Thunnissen F.B.J.M.,
                                                                                                                                                                                               "Continuous nitric oxide synthesis by inducible nitric oxide synthase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RÂY CRYSTALLOGRAPHY (2.55 ANGSTROMS) OF 74-504.
MEDILNE-99344067; Pubmed-10409685;
Li H., Raman C.S., Glaser C.B., Blasko E., Young T.A., Parkinson J.F.
Whitlow M., Poulos T.L.;
                                                                                                                                                                                                                                                                                                                                              to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Block K.D., Wolffam J.R., Brown D.M., Roberts J.D. Jr., Zapol D.G., Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.; Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, and NOS2), colocalize to human chromosome 17."; Genomics 27:526-530(1995).
                                   TISSUE-Glioblastoma;
MEDLINE-9515557; PubMed:7531687;
MEDLINE-95155567; PubMed:7531687;
Medvarl A., Zeniya M., Esumi H.;
"Cloning and functional expression of human inducible nitric oxide synthase (NOS) cDNA from a glioblastoma cell line A-172.";
J. Biochem. 116:575-581(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                     McLay J.S., Chatterjee P., Nicolson A.G., Jardine A.G., McKay N.G., Ralston S.H., Grabowski P., Haites N.E., Macleod A.M.,
                                                                                                                                                                                                                                                              TISSUE-Cardiac myocytes;
MEDLINE-97304504; PubMed-9160867;
Luss H., Li R.-K., Shapiro R.A., Tzeng E., McGowan F.X., Yoneyama Hatakayama K., Geller D.A., Mickle D.A.G., Simmons R.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              X-RAY CRYSTALLOGRAPHY (2.25 ANGSTROMS) OF 82-528.
MEDLINE-99173237; PubMed-10074942;
Fischmann T.O., Hruza A., Niu X.D., Fossetta J.D., Lunn C.A.,
Dolphin E., Prongay A.J., Reichert P., Lundell D.J., Narula S.K.,
Weber P.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               Hawksworth G.M.;
Mitric oxide production by human proximal tubular cells: a novel
immunomodulatory mechanism?";
Kidney Int. 46:1043-1049(1994).
                                                                                                                                                                                                                                                                                                                  Billiar T.R.;
"Dedifferentiated human ventricular cardiac myocytes express
inducible nitric oxide synthase mRNA but not protein in response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Taylor B.S., Alarcon L.H., Billiar T.R.; Inducible nitric oxide synthase in the liver: regulation and
                                                                                                                                                                                                             in normal human airway epithelium in vivo.";
Proc. Natl. Acad. Sci. U.S.A. 92:7809-7813(1995)
Biochem. Biophys. Res. Commun. 205:85-91(1994).
                                                                                                                                                                                                                                                                                                                                                                      J. Mol. Cell. Cardiol. 29:1153-1165(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Biol. Chem. 274:21276-21284(1999).
                                                                                                                             SEQUENCE FROM N.A.
TISSUE~Alrway epithelium;
MEDLINE~95372368; PubMed~7544004;
                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-Kidney;
MEDLINE-95165725; Pubmed⊹7532248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CHARACTERIZATION.
MEDLINE⇔98389865; Pubmed⇔9721329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-96047340; PubMed-7558036;
                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE OF 380-473 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                           LPS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Biokhimila 63:766-781(1998).
                                                                                                                                                                                                                                                                                                                                                          IFNgamma, and
                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CHARACTERIZATION.
                                                                                                                                                                                   Erzurum S.C.
                                                                                                                                                                                                                                                                                                                                                          TNF,
```

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                       THE ENZYME (BY SIMILARITY).

--- ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (IN CONTRAST WITH MOUSE DOS2). ASPIRIN INHERS EXPRESSION AND FUNCTION OF THIS ENZYME AND EPFECTS MAY BE EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY (BY SIMILARITY).

--- SUBBNIT: HOMODIMER.
                                                 NITRIC OXIDE + N NADP(+).
COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES
TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IPHULL, ...
InterPro; IPHULL, ...
InterPro; IPRO03097; -.
Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00319; FLAVODOXIN.
PRINTS; PR00311; FPNO.
PRINTS; PR00311; FPNO.
Oxidoreductase; NAPP; FAD; FMN; Calcium-binding; Calmodulin-binding; Oxidoreductase; NAPP; FAD; FMN; Calcium-binding; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL).
                 MEDIATES TUMORICIDAL AND BACTERICIDAL ACTIONS. CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) \circ CITRULLINE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES,
                                                                                                                                                                                                                                                       AIRWAY EPITHELIAL CELLS OF THE LUNG. NOT EXPRESSED IN THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CALMODULIN-BINDING (POTENTIAL)
                                                                                                                                                                                                                                                                                           -! - INDUCTION: BY TREATMENT WITH ENDOTOXINS OR CYTOKINES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CAPK)
CAPK)
CAPK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AND 6).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (BY
(BY
(BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PHOSPHORYLATION
PHOSPHORYLATION
PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       REF.
REF.
REF.
REF.
REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REF.
                                                                                                                                                                                                                                                                                                          -! - SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0 1 > # H & 1 H &
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; L09210; AAA59171.1; --
EMBL; X73029; CAA51512.1; --
EMBL; U05810; AAA5666.1; --
EMBL; U01511; AAA49041.1; --
EMBL; U26525; BAA6531.1; --
EMBL; U26141; AAB60366.1; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , S75615, AAD14179.1; -. A47475; A47475.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AF068236; AAC19133.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MIM; 10.000, IDR001094; -. InterPro; IPR001094; -. TPR001433; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR001433; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
529
654
778
913
996
1091
110
1115
234
892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INSI; 07-JAN-00.
ZNSI; 07-JAN-00.
4NOS; 04-FEB-00.
163730; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           978
1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1110
1115
234
578
892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           423
608
676
800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       23
                                                                                                                                                                                                                                                                            PLATELETS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        UP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIR;
PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PDB;
MIM;
```

629 AA

```
STANDARD;
                                                                                                                                                                                            NCBI_TaxID=727;
                                                                                                                                                                                                                                                                                                                                                                          Venter J.C.;
                                      T3MH_HAEIN
P71366;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
              RESULT 3
T3MH_HAEIN
                                                                                                                                       HI1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                Lane T.E., Buchmeier M.J., Warty D.D., Fox H.S.;

Expression of inflammatory cytokines and inducible nitric oxide
synthase in brains of SIV-infected rhesus monkeys: applications to
synthase in brains of SIV-infected rhesus monkeys: applications to
HV-induced central nervous system disease.";
MOI. Med. 2:27-37(1996).

I.E. PUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. INOS AND NO MAY
CONTRIBUTE TO SIMIAN IMMUNODEFICIENCY VIRUS (SIV)-INDUCED CENTRAL
CONTRIBUTE OSIMIAN IMMUNODEFICIENCY VIRUS (SIV)-INDUCED CENTRAL
CONTRIBUTE AND NADE(+).

I.C. CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE +
NITRIC OXIDE + N NADP(+).

I.C. COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES
TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
THE ENZYME (BY SIMILARITY).

THE ENZYME (BY SIMILARITY).

LINING BEGILATION: NOT STIMULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                            ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ó
                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Cercopithecidae,
                                                                                                                                                                        30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYMPHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
(INDUCIBLE NOS) (INOS) (FRAGMENT)
                            ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .;
0
 Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score 81; DB 1; Length 162;
Pred. No. 9.4e-07;
1; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme;
                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0457464D32287065 CRC64;
 Score 96; DB 1; 1 Pred. No. 2.8e-08;
                            Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -1- INDUCTION: BY LIPOPOLYSACCHARIDES.
-1- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -1- SUBUNIT: HOMODIMER (BY SIMILARITY).
                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                                                                                                          TISSUE-Microglia;
MEDLINE-97056192; PubMed-8900532;
                                                                                                                                                                                                                                                            Macaca mulatta (Rhesus macaque).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1;
                           ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          17813 MW;
Query Match
Best Local Similarity 100.0%;
Matches 18; Conservative 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 84.4%;
88.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; U31907; AAC39525.1; -.
                                                    1 SPVTQDDLQYHNLSKQQN 18
                                                                   37 SPVTQDDLQYHNLSKQQN 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 88.9
Matches 16; Conservative
                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                    Cercopithecinae; Macaca
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          162 AA;
                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SIMILARITY).
                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=9544;
                                                                                                                                                  NOS2_MACMU
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON_TER
SEQUENCE
                                                                                                                       RESULT 2
NOS2_MACMU
                                                    ò
                                                                              g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lib-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                "Whole-genome random sequencing and assembly of Haemophilus influenzae
01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
91-OCT-2000 (Rel. 40, Last annotation system HINDVIP ENZYME MOD (EC 2.11.72) (HINDVIP METHYLTRANSFERASE) (M.HINDVIP).
                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN=RD / KW20 / ATCC 51907;
MEDLINE=93350630; PubMed=7542800;
Fleischmann R.D., Adams M.D., White O., Clayton R.A., Kirkness E.F.,
Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.M.,
McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D.,
Scott J.D., Shirley R., Liu L.-I., Glodek A., Kelley J.M.,
Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D.,
Utterpack T.R., Hanna M.C., Nguyen D.T., Saudek D.M., Brandon R.C.,
Fine L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M.,
Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR002941; --
Pfam; PF01555; N6_N4_Mtase; 1.
Pfam; PR01506; D21N6MTRRASE.
PRINTS; PR00508; S21N4MTRRASE.
PROSITE; PS00092; N6_MTASE; 1.
Hypothetical protein; Transferase; Methyltransferase; DNA-binding; Restriction system.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Science 269:496-512(1995).
-!- CATALYTIC ACTIVITY: S-ADENOSYL-L-METHIONINE + DNA ADENINE -
S-ADENOSYL-L-HOMOCYSTEINE + DNA 6-METHYLAMINOPURINE.
-!- SUBUNIT: CONTAINS TWO DIFFERENT SUBUNITS: RES AND MOD. MOD IS
A HOMOTETRAMER (BY SIMILARITY).
-!- SIMILARITY: WITH OTHER TYPE III MOD PROTEINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; gamma subdivision; Pasteurellaceae;
Haemophilus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               46.9%; Score 45; DB 1; Length 629;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             629 AA; 71845 MW; 93ADAD909DB41E84 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pred. No. 5.9;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REBASE; 3701; M.HindORF1056P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; U32786; AAC22721.1; -. TIGR; H11056; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      63.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR002295; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR002052; -.
                                                                                                                                                                                                                                Haemophilus influenzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001091;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ||:||:||:|:
415 DDIQYNNLNKE 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                6 DDLQYHNLSKQ 16
                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
```

RESULT 4

17 SLVTQDDLQYHSLSKQQN 34

1 SPVTQDDLQYHNLSKQQN 18

g G

```
Rainey P.B.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                YHCS_HAEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  YHCS_HAEIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  P43011;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                              Wilson R., Ainscough R., Anderson K., Baynes C., Berks M.,
Wilson R., Ainscough R., Anderson K., Copsey T., Cooper J., Coulson A.,
Craxton M., Dear S., Du Z., Durbin R., Favello A., Fraser A.,
Fulton L., Gardner A., Green P., Hawkins T., Hillier L., Jier M.,
Johnston L., Jones M., Kerslaw J., Kirsten J., Laisster N.,
Latrellle P., Lightning J., Lloyd C., Mortimore B., O'Callaghan M.,
Parsons J., Percy C., Rifken L., Roopra A., Saunders D., Shownkeen R.,
Sims M., Smaldon N., Smith A., Sonnhammer E., Staden R.,
Sulston J., Thierry-Mieg J., Thomas K., Vaudin M., Vaughan K.,
Waterson R., Watson A., Weinstock L., Wilkinson-Sproat J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                            Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    12.2 Mb of contiguous nucleotide sequence from chromosome III of C.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PANB_PSEFL STANDARD; PRT; 266 AA.
092EPB;
01-0CT-2000 (Rel. 40, Created)
01-0CT-2000 (Rel. 40, Last sequence update)
01-0CT-2000 (Rel. 40, Last annotation update)
3-METHYL-2-OXOBUTANOATE HYDROXYMETHYLTRANSFERASE (EC 2.1.2.11)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 45; DB 1; Length 705; Pred. No. 6.7; 8; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
                                         01-FEB-1994 (Rel. 28, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
HYPOTHETICAL 80.6 KDA PROTEIN T05G5.9 IN CHROMOSOME III.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COILED COIL (POTENTIAL).
9E89873F5FC04966 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hypothetical protein, Colled coll.

Colled Coll (POTENTIAL)

DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    COIL (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COILED
                                                                                                                                                                                                                                                                                         STRAIN-BRISTOL N2;
MEDLINE-94150718; PubMed-7906398;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              80637 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              46.98;
37.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; 227079; CAA81596.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PIR; S41009; S41009.
WormPep; T05G5.9; CE21153.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             203 ITENDLEVNNMKKEKN 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 37.5
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3 VTQDDLQYHNLSKQQN 18
  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nature 368:32-38(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR000237; -. Pfam; PF01465; GRIP; 1.
                                                                                                                                                     Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         641
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      562 6
705 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                        NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Wohldman P.;
YNP9 CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Durbin R.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          REVISIONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PANB_PSEFL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             엄
NOTE THE STATE OF 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "Whole-genome random sequencing and assembly of Haemophilus influenzae
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-95350630; PubMed-7542800; Patch State St
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                               "Adaptation of Pseudomonas fluorescens to the plant rhizosphere.";
Submitted (DEC-1998) to the EMBL/GenBank/DDBJ databases.
-1- CATALYTIC ACTIVITY: 5,10-METHYLENETETRAHYDROFOLATE +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3-METHYL-2-OXOBUTANOATE - TETRAHYDROFOLATE + 2-DEHYDROPANTOATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chandler M.S., Smith R.A.; "Characterization of the Haemophilus influenzae topA locus: DNA topoisomerase I is required for genetic competence."; Gene 169:25-31(199).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                 Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae; Pseudomonas.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Bacteria; Proteobacteria; gamma subdivision; Pasteurellaceae;
Haemophilus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 266;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AJ130846; CAA10222.1; -.
Transferase; Methyltransferase.
SEQUENCE 266 AA; 27969 MW; 51B59D25C30E03F3 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1995 (Rel. 32, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
HYPOTHETICAL TRANSCRIPTIONAL REGULATOR HI1364 (ORF2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 44; DB 1;
Pred. No. 3.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          288 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -!- SIMILARITY: BELONGS TO THE PANB FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last seq
01-OCT-2000 (Rel. 40, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN-RD / KW20 / ATCC 51907;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        45.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
Pseudomonas fluorescens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Haemophilus influenzae.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ||| |:| || |
59 PVTTDELAYHTAS 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 PVTQDDLQYHNLS 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                             NCBI_TaxID=294;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=727;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PubMed=8635745;
                                                                                                                                                                                                                                                                                                                          STRAIN-SBW25;
```

Length 661;

DB 1;

Pred. No. 20; Score 42;

43.8%;

99F89CADEE2D3B0A CRC64

ഗ

A.

```
InterPro; IPR002655; -:
Pfam; PF01756; ACOX; 1.
Oxidoreductase; Fatty acid metabolism; Peroxisome; Flavoprotein; FAD;
                                                                        661 AA; 74132 MW;
  PIR; B25123; OXCKX5
                                                                                                             Query Match
Best Local Similarity
                                               Multigene family.
INIT_MET 0
SEQUENCE 661 AA;
                                                                                                                                                                                                                                                                                                                                                  MURE OR BU221
                                                                                                                                                                                                                                                  MURE_BUCAI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NP_BIND
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                          RESULT 8
                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
  ò
                                                                                                                                                                                                                                                   à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -1- PATHWAY: INITIAL STEP OF THE PEROXISOMAL FATTY ACID BETA-OXIDATION SYSTEM.
                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                  Interrio, ....
PREMIT PROSIDE, HTH_1; 1.
PROSITE; PSO00126; HTH_LYSR_FAMILY; 1.
PROSITE; PSO0044; HTH_LYSR_FAMILY; 1.
HYPOThetical protein; Transcription regulation; DNA-binding.
DNA_BIND 19 38 H-T-H MOTIF (POTENTIAL).
288 VTGISLNF -> RAFIEFLSGLGLCSEIWENHEDNI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-NOV-1988 (Rel. 09, Created)
01-NOV-1988 (Rel. 09, Last sequence update)
01-NOV-1997 (Rel. 35, Last annotation update)
ACYL-COENZYME A OXIDASE I (EC 1.3.3.6) (ACYL-COA OXIDASE) (PXP-5).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomycetales; mitosporic Saccharomycetales; Candida.
                                                                                                                                                                                                                                                                                                                                                  ;
0
rd ";
Science 269:496-512(1995).
-1- SIMILARITY: BELONGS TO THE LYSR FAMILY OF TRANSCRIPTIONAL
REGULATORS. STRONG, TO E.COLI YHCS.
                                                                                                                                                                                                                                                                                                                         DB 1; Length 288
                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                    EEF3C22374352980 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               661 AA.
                                                                                                                                                                                                                                                                                                                                     Pred. No. 5.1;
                                                                                                                                                                                                                                                                                                                                                  2; Mismatches
                                                                                                                                                                                                                                                                                                                        44.8%; Score 43;
63.6%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -i- SUBUNIT: HOMOOCTAMER.
-i- SUBCELLULAR LOCATION: PEROXISOMAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                     288 AA; 32422 MW;
                                                                                                                                                          EMBL; U20964; AAC43726.1; -.
                                                                                                                                                                       U32816; AAC23011.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M12161; AAA34363.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Candida tropicalis (Yeast).
                                                                                                                                                                                                                                                                                                                                     Best_Local Similarity 63.6
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                       IGR; HILDOW,
EnterPro; IPR000847; -.
                                                                                                                                                                                                                                                                                                                                                                                        | | |||::||
178 PQTPDDLEHHN 188
                                                                                                                                                                                                                                                                                                                                                                          2 PVTQDDLQYHN 12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -1- COFACTOR: FAD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NCBI_TaxID=5482;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               CAO1_CANTR
                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 7
```

à

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        long as its content is in no way
noved. Usage by and for commercial
(See http://www.isb-sib.ch/announce/
  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Buchnera aphidicola (subsp. Acyrthosiphon pisum) (Acyrthosiphon pisum symbiotic bacterium).
Bacteria; Proteobacteria; gamma subdivision; Buchnera.
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Buchnera sp. APS.";
Nature 407:81-86(2000).
-!- FUNCTION: CELL WALL FORMATION. DIAMINOPIMELIC ACID ADDING ENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -!- CATALYTIC ACTIVITY: ATP + UDP-N-ACETYLMURAMOYL-L-ALANYL-D-GLUTAMATE + MESO-2,6-DIAMINOHEPTANEDIOATE = ADP + ORTHOPHOSPHATE + UDP-N-ACETYLMURAMOYL-L-ALANYL-D-GLUTAMYL-MESO-2,6-
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                   01-0CT-2000 (Rel. 40, Last sequence update)
01-0CT-2000 (Rel. 40, Last annotation update)
01-0CT-2000 (Rel. 40, Last annotation update)
UDP-N-ACETYLANDRAMOYLALANYL-D-GLUTAMATE--2,6-DIAMINOPIMELATE LIGASE
(EC 6.3.2.13) (UDP-N-ACETYLANDRAMYL-TRIPEPTIDE SYNTHETASE).
DIAMINOPIMELATE-ADDING ENZYME) (UDP-MURNAC-TRIPEPTIDE SYNTHETASE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN=TOKYO 1998;
MEDLINE=20445173; PubMed=10993077;
Shigenobu S., Watanabe H., Hattori M., Sakaki Y., Ishikawa H.;
"Genome sequence of the endocellular bacterial symbiont of aphids
Buchnera sp. APS.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1;
  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 497;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     use by non-profit institutions as long as its content modified and this statement is not removed. Usage by an entities requires a license agreement (See http://www.isb-or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Peptidoglycan synthesis; Cell wall; Cell division; Ligase; ATP-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       POTENTIAL).
2BEOCC808B370FBF CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -i- PATHWAY: PEPTIDOGLYCAN BIOSYNTHESIS.
-i- SUBCELLULAR LOCATION: CYTOPLASMIC (PROBABLE).
-i- SIMILARITY: BELONGS TO THE MURCDEF FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 41.5; DB 1;
Pred. No. 17;
3; Mismatches 4;
                                                                                                                                                                                                                                                         497 AA
                                                                                                                                                                                                                                                                                                                 Created)
Last sequence update)
4; Mismatches
                                                                                                                                                                                                                                                         PRT:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       122 A
56982 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        43.2%;
52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL; AP001118; BAB12937.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            207 LTQDHLDYHENLEKYES 223
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3 VTQDDLQYH-NLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DIAMINOHEPTANEDIOATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                9; Conservative
7; Conservative
                                                                                                                                                                                                                                                         STANDARD:
                                                     2 PVTQDDLQYHNLSKQQ 17
                                                                                         |::| |:|| |
43 PILKVDASYYNLTKDQ 58
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  497 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=118099;
                                                                                                                                                                                                                                                                                                           01-OCT-2000 (Rel.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
```

9

```
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-93221515; PubMed-7682072;
Wood E.R., Berger H. Jr., Sherman P.A., Lapetina E.G.;
"Hepatocytes and macrophages express an identical cytokine inducible
nitric oxides synthase gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Geng Y.J., Almquist M., Hansson G.K.; "cDNA cloning and expression of inducible nitric oxide synthase from trat vascular smooth muscle cells." Blochim. Biophys. Acta 1218:421-424(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
STRAIN-SPRAGUE-DAWLEY; TISSUE-AStrocytes;
MEDLINE-94231594; PubMed=7513765;
Galea E., Reis D.J., Feinstein D.L.;
"Cloning and expression of inducible nitric oxide synthase from rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mandrup-Poulsen T., Boel E., Nerup J.;
"Clonfing and expression of cytokine-inducible nitric oxide synthase CDNA from rat islets of Langerhans.";
Diabetes 44:753-758(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
TISSUE-Vascular smooth muscle;
MEDLINE-9191721; Pubmed-7680561;
Nunokawa Y., Ishida N., Tanaka S.;
"Cloning of inducible nitric oxide synthase in rat vascular smooth muscle cells."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-94039059; PubMed-7693462;
Adachi H., Iida S., Oguchi S., Ohshima H., Suzuki H., Nagasaki K.,
Kawasaki H., Sugimura T., Esumi H.;
"Molecular cloning of a CDNA encoding an inducible
calmodulin-dependent nitrig-oxide synthase from rat liver and its
                                                       NGS2_RAT STANDARD; PRT; 1147 AA, 006518; PS7774; 035765; 064558; Q64005; Q63267; O1-UN-1994 (Rel. 29, Created) 01-OCT-1996 (Rel. 34, Last sequence update) 01-OCT-2000 (Rel. 34, Last annotation update) NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II) (INDUCIBLE NOS) (INOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Karlsen A.E., Andersen H.U., Vissing H., Larsen P.M., Fey S.J., Cuartero B.G., Madsen O.D., Petersen J.S., Mortensen S.B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.

Kosuga K., Yul Y., Hattori R., Sase K., Eizawa H., Aoyama

Tnoue R., Sasayama S.;

"Cloning of an inducible nitric oxide synthase from rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Biochem. Biophys. Res. Commun. 191:767-774(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Biochem. Biophys. Res. Commun. 191:89-94(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN-SPRAGUE-DAWLEY; TISSUE-Hepatocytes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-WISTAR; TISSUE-Pancreatic islets; MEDLINE-95309542; Pubmed-7540573;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN∴SPRAGUE-DAWLEY; TISSUE∴AOrta;
MEDLINE-94325351; PubMed⊶7519448;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           J. Neurosci. Res. 37:406-414(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               expression in COS 1 cells.";
Eur. J. Biochem. 217:37-43(1993).
                                                                                                                                                                                                                                                                                                                                   Rattus norvegicus (Rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               astrocytes.
σ
                               NOS2_RAT
   RESULT
                                                                     HANDER CONTROL CONTROL
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN. ASPIRIN INHIBITS EXPRESSION AND FUNCTION OF THIS BNIZME AND EFFECTS MAY BE EXERPED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY (BY
                                                                                                                                                                              SEQUENCE OF 426-788 FROM N.A.
STRAIN-DAHL/RAPP SALT SENSITIVE STRAIN; TISSUE-Vascular smooth muscle;
MEDLINE-98195092; Pubmed-9235415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             -i- SUBGUTT: HOMODIMER (BY SIMILARITY).
-i- TISSUE SPECIFICITY: IN NORMAL KIDNEY, EXPRESSED PRIMARILY IN THE MEDULLARY THICK ASCENDING LIMB, WITH MINOR AMOUNTS IN THE MEDULLARY COLLECTING DUCT AND VASA RECTA BUNDLE.
-i- INDUCTION: BY INTERFERON GAMMA AND LIPOPOLYSACCHARIDE.
-i- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                Chen P.Y., Gladish R.D., Sanders P.W.; "Vascular smooth muscle nitric oxide synthase anomalies in Dahl/Rapp
                                                                                                                "Sequence analysis of inducible nitric oxide synthase in rat kidney,
                                                                                                                                                                                                                                                                                                                                STRAIN-WISTAR; TISSUE-Renal glomerulus; Saura M., Zaragoza C., Martinez-Dalmau R., Perez-Sala D., Lamas S.; "Advances in the studies of NO synthesis regulation in mesanglial
                                                                                                                                                                                                                                                                                                                                                                                                                               SEQÜENCE OF 479-655 FROM N.A.
STRIANS-SPRGUE-TAMBEK; TISSUE-Renal glomerulus;
MEDLINE-94276509; Pubmed-7514653;
Morrissey J.J., McCracken R., Kaneto H., Vehaskari M., Montanl D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Location of an inducible nitric oxide synthase mRNA in the normal
                                                              MEDLINE-97070590; Pubmed-8913516;
Tsutsumishita Y., Kawai Y., Takahara H., Onda T., Miyoshi J.,
                                                                                                                                 lung, and uterús.";
Biol. Pharm. Bull. 19:1374-1376(1996)
polymorphonuclear neutrophils.";
Endothelium 2:217-221(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Kidney Int. 45:998-1005(1994).
                                                                                                                                                                                                                                                                salt-sensitive rats.";
Hypertension 31:918-924(1998).
                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 509-740 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 420-479 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL: U26686; AAA85861.1;
EMBL: U03699; AAC13747.1;
EMBL: D12520; BAA02090.1;
EMBL: L12562; AAA41720.1;
EMBL: X76881; CAA54208.1;
                                                                                                                                                                                                                                                                                                                                                                                                  Nefrologia 16:35-39(1996).
                                                                                                  Futaki S., Niwa M.;
                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE-Myocardium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THE ENZYME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Klahr S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kidney.
                                                                                                                                                                                                                                                                                                                                                                                  cells.
```

â

EMBL; EMBL; EMBL;

EMBL;

The State of the second

N. Carlo

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profilt institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                  NITTIC OXIDE 2:242-249(1998).

-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIATES TUMORICIDAL AND BACTERICIDAL ACTIONS. MAY BE INVOLVED IN THE PATHOGENESIS OF DILATED CARDIOMYOPATHY OR OF EXERCISE INTOLERANCE OBSERVED IN PATIENTS WITH CHRONIC HEART FAILURE.

-!- CATALITIC ACTIVITY: L-ARGININE + N NADPH + M O(2) - CITRULLINE + NITRIC OXIDE + N NADP(+).

-!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HEME (BY SIMILARITY).

CALMODULIN BINDING (POTENTIAL).

FAM (PYRIMIDINE PART) (BY SIMILARITY).

FAD (FLAVIN PART) (BY SIMILARITY).

FAD (FLAVIN PART) (BY SIMILARITY).

NADP (RIBOSE PART) (BY SIMILARITY).

ZINC (BY SIMILARITY).

ZINC (BY SIMILARITY).

N -> S (IN AAC83554).

C -> E (IN AAC83554).

P -> Q (IN AAC83554).

P -> Q (IN AAC83554).

P -> Q (IN AAC83554).

TL -> NF (IN AAC83554).

E -> K (IN AAC83554).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam: PF00667; FAD_binding; 1.
Pfam: PF00175; oxidored_fad; 1.
PRINTS; PR00361; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding;
Heme; Zinc; Metal-binding; Multigene family.
30-MAY-2000 (Rel. 39, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE IID (EC 1.14.13.39) (NOS, TYPE II
                                                                                                                                                                                                                                                                                                                                                                                                                     -!- SUBUNIT: HOMODIMER (BY SIMILARITY).
-!- TISSUE SPECIFICITY: EXPRESSED IN THE HEART AND SKELETAL MUSCLE
DURING CHRONIC HEART FAILURE, BUT NOT IN HEALTHY INDIVIDUALS.
-!- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                      SEQUENCE FROM N.A.

TISSUE-Skeletal muscle, and Heart muscle;

TISSUE-Skeletal muscle, and Heart muscle;

TISSUE-Skeletal muscle, and Heart muscle;

Adams V., Krabbes S., Jang H., Yu J., Rahmel A., Gielen S.,

Schuler G., Hambrecht K.,

"Complete coding sequence of inducible nitric oxide synthase from human heart and skeletal muscle of patients with chronic heart
                                                                   Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                            THE ENZYME (BY SIMILARITY).
ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF049656; AAC83553.1; -. EMBL; AF051164; AAC83554.1; -. HSSP; P29477; INOC.
                                        (INDUCIBLE NOS) (INOS).
Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR001094; -. InterPro; IPR001433; -. InterPro; IPR001709; -. InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              651
775
910
993
1088
107
112
248
271
399
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    640
731
937
1009
1024
                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY).
                                                                                             NCBI_TaxID=9606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      197
506
620
764
900
975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DOMAIN
NP_BIND
NP_BIND
NP_BIND
NP_BIND
NP_BIND
MP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                           failure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 METAL
 ä
                                                                                                                                                                                                                                                             HEME (BY SIMILARITY).
CALMODULIN-BINDING (POTENTIAL).
FAN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
ZINC (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .,
,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1147;
                                                                                                                                                             InterPro; IPR003097; -.
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           7 AND 8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (9)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND 5).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AND 9).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                               SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 1;
                                                                                                                                                                                                                                                                                                                                                                                         (IN REF. 7).
(IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REF.
REF.
REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT; 1147 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ed. No. 47;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 41.5;
                                                                                                                                                                                                                                                  Zinc; Metal-binding; Multigene family
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ď
                                                                                                                                                                                                                                                                                                                                                                                           ^ ^
× ×
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ٨
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred.
                                                                                                                                                                                                                                                                                                                                                              ۰
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HUAKHE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MS2D_HUMAN STANDARD; 600591; 060604; 30-MAY-2000 (Rel. 39, Created)
                         AF006619; AAC16401.1; -. AF006620; AAC16402.1; -.
                                                   U48829; AAB18620.1; -. S71597; AAB31028.2; -. L36063; AAC02242.1; -.
D44591; BAA07994.1; -. D83661; BAA12035.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             43.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 43.2
Best Local Similarity 55.6
Matches 10; Conservative
                                                                                                                      InterPro; IPR001094; -. InterPro; IPR001433; -.
                                                                                                                                                    InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                    993
1088
107
112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           380
395
412
477
513
515
                                                                                            PIR; JC1472; JC1472.
HSSP; P29477; INOC.
```

CONFLICT
CON

DOMAIN NP_BIND NP_BIND NP_BIND NP_BIND NP_BIND

BINDING

CONFLICT

METAL

METAL

CONFLICT

CONFLICT CONFLICT CONFLICT CONFLICT

CONFLICT CONFLICT CONFLICT

RESULT 10

37

음

ò

NS2D_HUMAN

E S E

CONFLICT

```
Bacteria; Proteob
NCBI_TaxID~98794;
                                                                                                                                                                                                                                                                                                                 117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN C57BL/6;
                                       [1]
SEQUENCE FROM
                                                                                                                                                                                                                                                                                                         ATP-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-FEB-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-1996
01-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                            RP3A_MOUSE
P47708;
                                                                                                                                                                                                                                                                                                                NP_BIND
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 13
RP3A_MOUSE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RPH3A
   δ
                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
10-PN-ACETYLMURAMOYLALTYL-D-GLUTAMATE->2,6-DIAMINOPIMELATE LIGASE
(EC 6.3.2.13) (UDP-N-ACETYLMURAMYL-TRIPEPTIDE SYNTHETASE)
DIAMINOPIMELATE-ADDING ENZYME) (UDP-MURNAC-TRIPEPTIDE SYNTHETASE)
                                                                                                                                                                                                                Viruses; ssRNA negative-strand viruses; Bunyaviridae; Bunyavirus.
NCBI_raxID=11580;
                                                                ë,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                              Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 41; DB 1; Length 235;
Pred. No. 8.6;
2; Mismatches 5; Indels
                                                                Indels
 L (IN AAC83554).V (IN AAC83554).FF7E4C7ABA76D820 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1;
                                                                                                                                                             (Rel. 01, Created)
(Rel. 01, Last sequence update)
(Rel. 34, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            292 AA.
                                                                                                                                             235 AA
                                                                1; Mismatches
                                             Score 41.5;
Pred. No. 47;
                                                                                                                                                                                       NUCLEOCAPSID PROTEIN (NUCLEOPROTEIN)
                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; J02390; -; NOT_ANNOTATED_CDS
  ^ ^
                                                                                                                                                                                                                                          SEQUENCE FROM N.A. MEDLINE-82274210; Pubmed-7050911;
1076 1076 I - 1129 I - 1147 AA; 130528 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           42.7%;
50.0%;
                                             43.2%;
55.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 50.00,
                                                                               1 SPVTQDDLQYHNLSKQQN 18
                                                                                          || |||| : | |||
37 SPTTQDDPKSH---KHQN 51
                                       Query Match
Best Local Similarity 55.69
                                                                                                                                                                                                         Bunyavirus snowshoe hare,
                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 SPVTQDDLQYHNLS 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83 NPINSDDLTIHRLS 96
                                                                                                                                                                                                                                                                                                                                                                                                              PIR; A04103; VHVUNH.
                                                                                                                                                              21-JUL-1986
                                                                                                                                                                      21-JUL-1986
01-OCT-1996
                                                                                                                                             NCAP_BUNSH
P03513;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MURE_BUCAP
085298;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   FRAGMENT)
         CONFLICT
 CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MURE_BUCAP

ID MURE_B

AC 085298

AC 15-JUL

DT 15-JUL

DT 30-MAY

DE UDP-N-

DE (EC 6.
                                                                                                                                    NCAP_BUNSH
 FT
                                                                                                a
                                                                                à
                                                                                                                                                     셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                   "Sequence analysis of a DNA fragment from Buchnera aphidicola (Aphid endosymbiont) containing the genes dapD-htrA-ilvI-ilvH-ftsL-ftsI-murE.";
                                                                                                                                                                                                                                                                                                                                       CUTT. Microbiol. 37:214-216(1998).
-!- FUNCTION: CELL WALL FORMATION. DIAMINOPIMELIC ACID ADDING ENZYME
(BY SIMILARITY:
-!- CATALYTIC ACTIVITY: ATP + UDP-N-ACETYLMURAMOYL-L-ALANYL-D-GGLTAANTE + MESO-2,6-DIAMINOHEPTANEDIOATE - ADP + ORTHOPHOSPHATE
+ UDP-N-ACETYLMURAMOYL-L-ALANYL-D-GLUTAMYL-MESO-2,6-
DIAMINOHEPTANEDIOATE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              J. Biochem. 116:239-242(1994).
-!- FUNCTION: PROTEIN TRANSPORT. PROBABLY INVOLVED WITH RAS-RELATED PROTEIN RAB-3A IN SYNAPTIC VESICLE TRREFIC AND/OR SYNAPTIC VESICLE FUSICLE FUSION. COULD PLAY A ROLE IN NEUROTRANSMITTER RELEASE BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Inagaki N., Mizuta M., Seino S.;
"Cloning of a mouse Rabphilin-3A expressed in hormone-secreting
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; AF060492; AAC32338.1; -.
InterPro: PR000713; -.
Pfan; PF01225; Mur_ligase; 1.
Peptidoglycan synthesis; Cell wall; Cell division; Ligase;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 41; DB 1; Length 292;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 -i- PATHWAY: PEPTIDOGLYCAN BIOSYNTHESIS.
-i- SUBCELLULAR LOCATION: CYTOPLASMIC (PROBABLE).
-i- SIMILARITY: BELONGS TO THE MURCDEF FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       292 292
292 AA; 33467 MW; A4918644BF300AE8 CRC64;
Buchnera aphidicola (subsp. Schizaphis graminum).
Bacteria; Proteobacteria; gamma subdivision; Buchnera.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel. 33, Last sequence update)
(Rel. 35, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ATP (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            606 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-95122445; PubMed-7822236;
                                                                                                                                                                       MEDLINE-98353428; PubMed-9688822;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (Rel. 33, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              42.78;
57.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity 57.1
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RABPHILIN-3A (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         :||| | || || || 207 LTQDHLDYHKNMKQ 220
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3 VTQDDLQYHNLSKQ 16
                                                                                                                                                                                                              Thao M.L., Baumann P.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
```

ö

σ

```
470
286
286
515
526 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RABPHILIN-3A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mammalia:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RP3A_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DDATE STATE 
            à
                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics. Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions along as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -1- SUBCELLUIAR LOCATION: NUCLEAR (POTENTIAL).
-1- SIMILARITY: TO S.POMBE SPAC4G9.04C AND SOME, TO C.ELEGANS R144.2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE OF 286-626 FROM N.A.

MEDLINE=95192063; PubMed=7885847;

Davies C.J., Hutchison C.A. III;

"Insertion site specificity of the transposon Tn3.";

Nucleic Acids Res. 23:507-514(1995).

-!- FUNCTION: COMPONENT OF PRE-MRNA CLEAVAGE AND POLYADENYLATION
FACTOR I, INTERACTS WITH RNA14 AND RNA15.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PROSTIE: PS00499; C2_DOMAIN_1; 2.
PROSITE; PS50004; C2_DOMAIN_2; 2.
Repeat; Synapse; Protein transport.
DOMAIN 394 >606 PHOSPHOLIPID BINDING (PROBABLE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 41; DB 1; Length 606;
Pred. No. 27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Murphy L., Harris D., Barrell B.G., Rajandream M.A.;
Submitted (MAR-1995) to the EMBL/GenBank/DDBJ databases.
                                                                                          TISSUE SPECIFICITY: SPECIFICALLY EXPRESSED IN BRAIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   66634 MW; 29AA79E6A103B192 CRC64;
REGULATING MEMBRANE FLOW IN THE NERVE TERMINAL. SUBUNIT: MONOMER.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PC11_YEAST STANDARD; PRT; 626 AA. P39081; 004932; 01-FEB-1995 (Rel. 31, Created) 15-JUL-1998 (Rel. 36, Last sequence update) PCF11 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Saccharomyces cerevisiae (Baker's yeast).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C2 DOMAIN.
                                                                                                                            -1- SIMILARITY: CONTAINS 2 C2 DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PCF11 OR YDR228C OR YD9934,13C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; D29965; BAA06231.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Similarity 37.5%; 6; Conservative (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   443 NPVWNETLQYHGITEE 458
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HSSP; P21707; 1RSY.
MGD; MGI:102788; Rph3a.
InterPro; 1PR0010008; -.
InterPro; 1PR001965; -.
Pfam; PF00168; C2; 2.
Pfam; PF00628; PHD; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 SPVTQDDLQYHNLSKQ 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               485
>606
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN=S288C / AB972;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID-4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PC11_YEAST
AC PS19191
DT PC11_Y
AC PS19191
DT 15-UUL
DT 15-UUL
DT 15-UUL
DT 15-UUL
DE PCF11
CN PCF12
CN CN PCF12
CN CN PCF12
CN PCF12
CN PCF13
CN PCF13
CN PCF13
CN PCF13
CN PCF13
CN PCF14
CN PCF14
CN PCF15
CN P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
        SO THE THE TENT OF THE TENT OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ô
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ib-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 44-167 IN COMPLEX WITH RAB3A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTEIN TRANSPORT. PROBABLY INVOLVED WITH RAS-RELATED PROTEIN RAB-3A IN SYNAPTIC VESICLE TRAFFELS AND/OR SYNAPTIC VESICLE TRAFFELS AND SYNAPTIC PROGRED. FUSIOLE FUSION. COULD PLAY A ROLE IN NEUROTRANSMITTER RELEASE BY REGULATING MEMBRANE FLOW IN THE NERVE TERMINAL.
-: SUBUNIT: MONOMER.
-: TISSUE SPECIFICITY: SPECIFICALLY EXPRESSED IN BRAIN.
-: SIMILARITY: CONTAINS 2 C2 DOMAINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  of
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              [1]
SEQUENCE FROM N.A.
MEDLINE-95033210; PubMed-7946335;
Li C., Takei K., Geppert M., Daniell L., Stenius K., Chapman E.R.,
Jahn R., de Camilli P., Suedhof T.C.;
Synaptic targeting of rabphilin-3A, a synaptic vesicle
Ca2+/Phospholipid-binding protein, depends on rab3A/3C.";
Neuron 13:885-898(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Ostermeler C., Brunger A.T.;
"Structural basis of Rab effector specificity: crystal structure a "Structural basis of Rab effector specificity: crystal structure rather small G protein Rab3A complexed with the effector domain of rabphilin 3A.";
Cell 96:363-374(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 626;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4; Indels
                                                                                                                                                                                                                                                                              POLY-THR.

NSL -> ILS (IN REF. 2).

I -> V (IN REF. 2).

66F91BA9577E82F1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DB 1;
28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-FEB-1996 (Rel. 33, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          684 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                     EMBL: 248612; CAA88508.1; -.
EMBL: 01329; AAC33145.1; -.
PIR: S47936; S47936.
SGD; S0002636; PCF11.
mRNA processing; Nuclear protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 41;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Brain;
MEDLINE=99148269; PubMed=10025402;
                                                                                                                                                                                                                                                                                                                                                                          71898 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; U12571; AAA62662.1; -. PDB; 128D; 12-APR-99. InterPro; IPR000008; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      42.78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity 46.7
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  223 VLQERMRYHELQQQQ 237
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Rattus norvegicus (Rat)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 VTQDDLQYHNLSKQQ 17
                                                                                                                                                                                                                                                                                 473
288
```

```
DR InterPro; IPR001565; -.

DR Pfan; PF00168; -2; 2.

DR Pfan; PF00168; -2; 2.

DR Pfan; PF00168; -2; 2.

DR PRINTS; PR00360; C2DOMAIN.

DR PRINTS; PR00369; C2_DOMAIN.

DR PROSITE; PS00049; C2_DOMAIN.2; 2.

KW Repeat; Synapse; Protein transport; 3D-structure.

FT DOMAIN 397 645 PF005HOLIPID BINDING (PROBABLE).

FT DOMAIN 397 645 C2_DOMAIN.

FT DOMAIN 357 645 C2_DOMAIN.

SQ SEQUENCE 684 AA; 75832 MW; 05838BC3C7A86444 CRC64;

OURTY MATCh 42.7%; Score 41; DB 1; Length 684;

Best Local Similarity 37.5%; Pred. NO. 31;

Matches 6; Conservative 6; Mismatches 4; Indels 0; Gaps 0;
```

Search completed: September 10, 2001, 14:09:52 Job time: 561 sec

1 SPVTQDDLQYHNLSKQ 16 :|| :|| ::: 446 NPVWNETLQYHGITEE 461

ر م

```
; Search time 42.28 Seconds
(without alignments)
32.430 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                              219241
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                            Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                        219241 seqs, 76174552 residues
                                                                                                             September 10, 2001, 14:01:13
                                                                         OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                           1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                             US-08-833-506C-26
96
                                                                                                                                                                                     Title:
Perfect score:
                                                                                                                                                                                                                                                                Scoring table:
                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                               Run on:
```

Minimum DB seq length: 0 Maximum DB seq length: 2000000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

pir_68:*
1: pirl:*
2: pir2:*
3: pir3:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

hypothetical prote hypothetical prote hypothetical prote hypothetical prote B west mating prot hypothetical prote hypothetical prote GTI protein - mous hypothetical prote 3-methyl-2 oxobuta hypothetical prote hypothetical prote two-component sens acyl-CoA oxidase (nitric-oxide synth nitric-oxide synth nitric-oxide synth nitric-oxide synth nitric-oxide synth nitric-oxide synth nucleoprotein N hypothetical prote
hypothetical prote
rabphilin-3A - mou
rabphilin-3A - rat nitric-oxide synth nitric-oxide synth nitric-oxide synth UDP-N-acetylmuramo Description SUMMARIES A49676 C64180 D64171 D64171 T00906 J02149 J02149 J02149 J02149 J02174 T156774 T1568 J02174 T1568 J02174 T1568 J02174 T1568 J02174 J0218 J0 JC5028 JC5029 S65440 VHVUNH E81403 S59435 JX0338 I58166 G DB Query Match Length Score Result No.

probable membrane	probable secreted	multidrug resistan	transforming prote	probable glycosyla	cyclin-like protei	two-component sens	transforming prote	chitin synthase (E	suppressor protein	hypothetical prote	hypothetical prote		tunicamycin resist	hypothetical prote	hypothetical trans
S57385	A71623	B41249	S11198	D85042	S37607	E69600	TVHUMB	520538	537837	T49042	G86413	S64321	YTBST	T34058	E65202
~	~	7	7	~	ď	-	-	7	~	~	7	7	ч	7	7
991	1192	1302	348	448	452	542	761	1009	1082	1535	140	158	197	203	283
42.7	42.7	42.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	41.7	40.6	40.6	40.6	40.6	40.6
41	41	41	40	40	40	40	40	40	40	40	39	39	39	39	39

ALIGNMENTS

	nititovaxue syfunase (EC 114.13.39), inducible - numan C;Species: Homo sapiens (man) C;Date: 16-Feb-1996 #sequence_revision 16-Feb-1996 #text_change 20-Jun-2000
	C;Accession: A49676; JX0345; G01947; I38933; S47566; A47475 R;Charles, I.G.; Palmer, R.M.; Hickery, M.S.; Bayliss, M.T.; Chubb, A.P.; Hall, V.S.; Proc. Natl. Acad. Sci. U.S.A. 90, 11419-11423, 1993
	A; Title: Cloning, characterization, and expression of a cDNA encoding an inducible ni A; Reference number: A49676; MUID:94068614
	A; Accession: A490/o A; Status: preliminary A: Wolson's preliminary
	A; Residues: 1-1153 <res></res>
	J. BIOCHEM. 116, 3/3-381, 1994 A,Title: Cloning and functional expression of human inducible nitric oxide synthase (
	A;Reference number: JX0345; MUID:95155267 A;Accession: JX0345
	A; Molecule type: mRNA
	A;Residues: 1-607, 'L', 609-1153 <rok> A:Cross-references: DDRJ:D26525: NTD:G550326: PTDN:BAAD5531 1: PTD:G1228940</rok>
	A; Experimental source: glioblastoma cell line A-17
	R; Park, C; Park, R; Krishna, G;
	Submitted to the Embit Date Library, July 1995 A:Reference number: GAR412
	A; Accession: 601947
	A;Status: translated from GB/EMBL/DDBJ
	A; Molecule type: mRNA
	A; Cross-references: EMB: U31511; NID: 9951320; PIDN: AAB49041.1; PID: 9951321
	R;Guo, F.H.; De Raeve, H.R.; Rice, T.W.; Stuehr, D.J.; Thunnissen, F.B.; Erzurum, S.C.
	Proc. Natl. Acad. Sci. U.S.A. 92, 7809-7813, 1995 A; Title: Continuous nitric oxide synthesis by inducible nitric oxide synthase in norm
	A; Reference number: 138933; MUID:95372368
	A;Accession: 13933 A;Accession: 13933 A;Setus: preliminary; nucleic acid sequence not shown; translation not shown
	A; Molecule type: mRNA
	A; Residues: 1.6/5,1.6/1.1932,(g. 1934-905), "A', "BO-1.1153, CKEZ> A: Crocs - references : FMRI.170141: NID.a6874R0. PIDN.AABK0346 1: PID.a6874R1
	R; Maier, R.; Bilbe, G.; Rediske, J.; Lotz, M.
	Biochim. Biophys. Acta 1208, 145-150, 1994
	A:Title: Inducible nitric oxide synthase from human articular chondrocytes: CDNA clon
	A. Meterene induser: 34/000; Moldonosono A. Accession: 84756
	A; Status: preliminary; nucleic acid sequence not shown
	A; Residues: 1-22,'G', 24-153,'L',155-176,'V',178-799,'A',801-912,'P',914-1153 <mai></mai>
	A;Cross-references: EMBL:U05810; NID:q452487; PIDN:AAA56666.1; PID:q452488 R:Geller, D.A.: Lowenstein, C.J.: Shapiro, R.A.: Nissler, A.K.: Di Silvio, M.: Wang,
_	Proc. Natl. Acad. Sci. U.S.A. 90, 3491-3495, 1993

ö

Gaps

ö

Indels

Length 690;

Score 45; DB 2; Pred. No. 15; 8; Mismatches

```
C; Accession: D64171
R; Fleischmann, R.D.; Adams, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavage; Gozayre, J.D.; Scott, J.; Shirley, R.; Liu, L.I.; Glodek, A.; Kelley, J.M.; Woldman, Science 269, 496-512, 1995
A; Authors: Gnehm, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Vente A; Reference number: A64000; MUID:95350630
A; Accession: D64171
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Cross-references: GB:U32816; GB:L42023; NID:g1574193; PIDN:AAC23011.1; PID:g1574196
C;Superfamily: conserved hypothetical protein HI1364
                                                                                                                                                                                             A;Cross-references: EMBL:227079; NID:g414641; PID:g414650
C;Genetics:
A;Introns: 13/3; 45/2; 68/3; 102/3; 135/3; 286/2; 323/3; 547/3; 565/1; 610/3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  hypothetical protein HI1364 - Haemophilus influenzae (strain Rd KW20)
C;Species: Haemophilus influenzae
C;Date: 18-Aug-1995 #sequence_revision 18-Aug-1995 #text_change 29-Sep-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: nucleic acid sequence not shown; translation not shown
submitted to the EMBL Data Library, October 1993
A;Reference number: $41001
A;Accession: $41009
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-690 <THO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 63.6%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                         1 46.9%;
Similarity 37.5%;
6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :|::||: :|| 203 ITENDLEVNNMKKEKN 218
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Introns: 215/1; 240/2; 279/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3 VTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       178 PQTPDDLEHHN 188
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Molecule type: DNA
A; Residues: 1-288 <TIGR>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2 PVTQDDLQYHN 12
                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
Matches 6; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      C;Genetics:
A;Gene: ATSP:F21B7.20
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Accession: T00906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ស
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
T00906
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           å
                                                                                                                                                  A Residues: 1-422, 'I', 424-804,'D', 806-830,'SP',833-932,'G',934-965,'A',967-986,'V',988-1
A; Cross-references: GB:L09210; NID:g292241; PIDN:AAA59171.1; PID:g292242
A; Cross-references: GB:L09210; NID:g292241; PIDN:AAA59171.1; PID:g292242
A; Note: sequence extracted from NCBI backbone (NCBIP:129733)
C; Genetics:
A; Genetics: GB:NOS2A; NOS2; INOS
A; Genetics: GB:NOS2A; NOS2; INOS
A; Cross-references: GDB:139215; OMIM:163730
A; Map position: 17cen-17q11.2
C; Function:
A; Description: catalyzes the oxidation of an L-arginine guanidino nitrogen and of NADPH
C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH-ferrihemoprotein reduce
C; Keywords: calmodulin binding *status predicted
C; Superfamily: nitric-oxide synthase; flavodoxin homology <FEH>
C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH-ferrihemoprotein reductase homology <FEH>
C; Superfamily: nitric-oxide synthase; flavodoxin homology credicted
C; Keywords: calmodulin binding *status predicted
F; 509-529/Region: Calmodulin binding *status predicted
F; 509-529/Region: FMN binding *status predicted
F; 765-778/Region: FMN binding *status predicted
F; 765-778/Region: NADP-ribose binding *status predicted
F; 778-996/Region: NADP-ribose binding *status predicted
F; 200/SBinding site: heme iron (Cys) (axial ligand) *status predicted
   A;Title: Molecular cloning and expression of inducible nitric oxide synthase from human A;Reference number: A47475, MUID:93234523
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    hypothetical protein H11056 - Haemophilus influenzae (strain Rd KW20)

C;Species: Haemophilus influenzae
C;Species: Accession: C64180

R;Fleischmann, R.D.; Adams, M.D.; White, O.; Clayton, R.A.; Kirkness, E.F.; Kerlavage, A. F;Fleischmann, T.S.; Scott, J.; Shirlay, R.; Liu, L.I.; Glodek, A.; Kalley, J.M.; Weldman, D.M.; Brandon, R.C.; Fine, L.D.; Fritchman, J.L.; Glodek, A.; Kalley, J.M.; Weldman, J.M.; Mandlon, C.L.; McDonald, L.A.; Small, K.V.; Fraser, C.M.; Smith, H.O.; Venter, A.; Heference number: A64000; MUID:95350630
A;Reference number: A64000; MUID:95350630
A;Status: nucleic acid sequence not shown; translation not shown
A;Residues: 1-659 <TIGRA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Cross-references: GB:U32786; GB:L42023; NID:q1574605; PIDN:AAC22721.1; PID:q1574609;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              hypothetical protein T05G5.9 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 06-Jan-1995 #sequence_revision 06-Jan-1995 #text_change 09-Sep-1997
C;Accession: S41009
R;Thomas, K.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 96; DB 2; Length 1153; Pred. No. 6e-08;
                                                                                                      translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            46.9%; Score 45; DB 2; Length 629. 63.6%; Pred. No. 14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ô
                                                                                                   A;Status: preliminary; not compared with conceptual A;Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           37 SPVTQDDLQYHNLSKQQN 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match 100
Best Local Similarity 100
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 63.6
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ||:||:||:|:
415 DDIQYNNLNKE 425
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6 DDLQYHNLSKQ 16
                                                               A; Accession: A47475
A; Status: prelimina
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
S41009
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             õ
```

```
A;Status: translated from GB/EMBL/DDBJ
A;MoLecule type: DNA
Residues: 1.447 - CSHI>
A;Cross-references: EMBL:AC002560; NID:g2618677; PID:g2809251; GSPDB:GN00059; ATSP:F2
                                                                                                             C, Accession: T00906 Conway, K.; Feng, J.; Kim, C.; Li, Y.; Sun, H.; Conway, A.; eclogis, A.; Ecker, J.R. eclogis, A.; Ecker, J.R. submitted to the EMBL Data Library, January 1998 A; Description: Genomic sequence for Arabidopsis thaliana BAC F21B7. A; Reference number: 214208
hypothetical protein F21B7.20 - Arabidopsis thaliana
C;Species: Arabidopsis thaliana (mouse-ear cress)
C;Date: 12-Feb-1999 #sequence_revision 12-Feb-1999 #text_change 22-Oct-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 2; Length 447;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  44.8%; Score 43;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
```

ö

Gaps

ö

2; Indels

Score 43; DB 2; Pred. No. 12; 2; Mismatches

Length 288

 \sim

ö

```
C;Species: Mus musculus (house mouse)
C;Species: Mus musculus (house mouse)
C;Date: 22-Oct-1999 #sequence_revision 22-Oct-1999 #text_change 21-Jul-2000
C;Accession: T30250
R;Imal, Y; Suzuki, Y.; Matsui, T.; Tohyama, M.; Wanaka, A.; Takagi, T.
Brain Res. Mol. Brain Res. 31, 1-9, 1995
A;Title: Cloning of a retinoic acid-induced gene, GTl,in the embryonal carcinoma cell A;Reference number: 220788; MUID:96078271
A;Accession: T30250
                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Gene: CESP:Y39G8C.b
A;Map position: 1
A;Introns: 69/3; 117/2; 186/3; 226/3; 268/3; 371/3; 540/3; 857/1; 881/3; 1025/3; 1077
                                                                                                         With the EMBL Data Library, October 1998
A; Reference number: 220263
A; Reference number: 220263
A; Accession: T26774
A; Accession: T26774
A; Molecule type: DNA
A; Molecule type: DNA
A; Residues: 1-1801 < MIL>
A; Cross-references: EMBL:AL032634; PIDN:CAB54418.1; GSPDB:GN00019; CESP:Y39G8C.b
A; Experimental source: Clone Y39G8C
C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-1840 <IMA>
A;Cross-references: EMBL:D29801; NID:g475015; PIDN:BAA06184.1; PID:g475016
A;Experimental source: brain
A;Note: expression was specifically localized in neurons but not in glial cells
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 C.Species: Oryza sativa (rice)
C.Date: 18-Aug-2000 #sequence_revision 18-Aug-2000 #text_change 02-Sep-2000
C;Date: 15-Oct-1999 #sequence_revision 15-Oct-1999 #text_change 15-Oct-1999 C;Accession: T26774
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Superfamily: Arabidopsis thaliana hypothetical protein F6N15.22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1840;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1801;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 43; DB 2;
Pred. No. 1.1e+02;
3; Mismatches 4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A.Status: preliminary, translated from GB/EMBL/DDBJ
A,Molecule type: mRNA
A,Residues: 1-186 <SAW>
A;Cross-references: EMBL.AF098753; PIDN:AAC72848.1
C;Superfamily: Arabidopsis thaliana hypothetical pro
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 42; DB 2;
Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
1e+02;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 43; DB 2
Pred. No. 1e+02
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C,Accession: T51588
R;Sawa, S.; Watanabe, K.; Okada, K.
submitted to the EMBL Data Library, October 1998
A;Reference number: 225399
A;Accession: T51588
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein 2 [imported] - rice
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               44.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ouery Match
Best Local Similarity 53...
Best Aconservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity 66.7
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ||: | | ||: | |:
282 TQETLHYQNLAKYQH 296
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          4 TODDLOYHNLSKOON 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | |:| |:||||
598 DKLRYKNISKQQ 609
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              6 DDLQYHNLSKQQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GT1 protein - mouse
                                                                                      R; Smye, R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                       B west mating protein 2 (UhbW2) - smut fungus (Ustilago hordei)
C;Species: Ustilago hordei (barley smut)
C;Species: Ustilago hordei (barley smut)
C;Species: 14-Jul-1994 #sequence_revision 14-Jul-1994 #text_change 24-Sep-1999
C;Accession: J02149; S33368
R;Bakkeren, G; Kronstad, J.W.
Plant (Cell 5, 123:136, 1993
A;Title: Conservation of the b mating-type gene complex among bipolar and tetrapolar smuth A;Reference number: S33365; MUID:93177212
A;Reference number: S33365; MUID:93177212
A;Reference number: S33365; MUID:9287659; PIDN:CAA79217.1; PID:9287661
A;Residues: 1-647 <BAK>
A;Residues: 1-647 <BAK<
A;Residues: 1-647 <BAK<
A;Residues: 1-647 <BAK<
A;Residues: 1-647 <BAK<

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N.Alternate names: hypothetical protein LPH2w (Species: Saccharomyces cerevisiae (Species: Saccharomyces cerevisiae (Species: Saccharomyces cerevisiae (Species: 10-Apr-1996 #sequence_revision 19-Apr-1996 #text_change 05-Nov-1999 (SAccession: 561997 P.S.)

R.S.Chlenstedt, G.; Silver, P.A.

Submitted to the EMBL Data Library, December 1995 A.Reference number: 561996 A.Reference number: 561996 A.Recession: 561997 A.Molecule type: DNA A.Residues: 1-1032 A.SCH A.Residues: 1-1032 A.SCH A.Residues: 1-1032 A.SCH A.Residues: EMBL:U43503; NID:g1163087; PID:g1163089; GSPDB:GN00016; MIPS:YPL125w A.Molecule: MIPS:YPL125w A.Mol
                                             ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           hypothetical protein YPL125w - yeast (Saccharomyces cerevisiae)
N;Alternate names: hypothetical protein LPH2w
C;Species: Saccharomyces cerevisiae
C;Date: 10-Apr-1996 #sequence_revision 19-Apr-1996 #text_change 05-Nov-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                             5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1032;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 647
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein Y39GBC.b - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ..
                                             4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 7
31;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DB
           ed. No. 20;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 43;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Š.
           Pred.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           44.88;
   Best Local Similarity 61.1%;
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              44.8%;
                                                                                                                                                                                    211 VTODDLLYVFSNLSRNVN 228
                                                                                                                 3 VTQDDLQY -- HNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       379 SPFTSDNVNLSNVSQQQ 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 961 PLTAEQLRYHQLCKNND 977
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 SPVTQDDLQYHNLSKQQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 41.2
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    T26774
                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          a
                                                                                                                    õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
```

ô

õ g

```
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-597 <STNA
A;Cross-references: GB:AP001516; GB:BA000004; NID:g10175192; PIDN:BAB06446.1; GSPDB:G
A;Experimental source: strain C-125
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           acyl-CoA oxidase (EC 1.3.3.6) POX5, peroxisomal - yeast (Candida tropicalis)
N.Alternate names: acyl-CoA oxidase I
C.Species: Candida tropicalis
C.Species: Candida tropicalis
C.Date: 31-Mar-1989 #sequence_revision 31-Mar-1989 #text_change 11-Jun-1999
C.Accession: B25123
R.Okazaki, K.; Takechi, T.; Rambara, N.; Fukui, S.; Kubota, I.; Kamiryo, T.
Proc. Natl. Acad. Sci. U.S.A. 83, 1232-1236, 1986
A;Title: Two acyl-coenzyme A oxidases in peroxisomes of the yeast Candida tropicalis: A;Reference number: A94084; MUID:86149279
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        two-component sensor histidine kinase BH2727 [imported] - Bacillus halodurans (strain
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 R;Takami, H.; Nakasone, K.; Takaki, Y.; Maeno, G.; Sasaki, R.; Masui, N.; Fuji, F.; Nucleic Acids Res. 28, 4317-4331, 2000
A;Title: Complete genome sequence of the alkaliphilic bacterium Bacillus halodurans A;Reference number: A83550; MUID:20263314
A;Reference number: A83550; MUID:20263314
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                     A;Residues: 1-395 <CON>
A;Cross-references: EMBL:U67951; PIDN:AAB07575.1; GSPDB:GN00028; CESP:C47C12.6
A;Experimental source: strain Bristol N2; clone C47C12
hypothetical protein C47C12.6 - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 15-Oct.1999 #sequence_revision 15-Oct.1999 #text_change 18-Feb-2000
C;Accession: T25651
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       C;Species: Bacillus halodurans
C;Date: 01-Dec-2000 #sequence_revision 01-Dec-2000 #text_change 31-Dec-2000
C;Accession: G83990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A, Accession: B25123
A, Molecule type: DNA
A, Residues: 1-662 <OKA>
A, Cross-references: GB:M12161; NID:g170913; PIDN:AAA34363.1; PID:g170914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 395
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 597;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Map position: X
A;Introns: 115/3; 148/3; 219/3; 252/3; 274/2; 322/1; 342/3
                                                                                                                                  Riconnell, M. submitted to the EMBL Data Library, August 1996 A; Description: The sequence of C. elegans cosmid C47C12. A; Accession: T25651
                                                                                                                                                                                                                                                                                                    A, Status: preliminary; translated from GB/EMBL/DDBJ
A, Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 42; DB 2;
Pred. No. 26;
4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .;
?
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      core 42; DB;
ced. No. 42;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 42;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         43.8%;
50.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      43.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 50.0
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 SPVTQDDLQYHNLSKQ 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match 43.E
Best Local Similarity 46.7
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ||| |:||:| :: :
144 PVTWDELQHHAVTTE 158
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 PVTQDDLQYHNLSKQ 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Gene: CESP:C47C12.6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C;Genetics:
A;Gene: BH2727
                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         G83990
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                     G. Species: Vibrio cholerae
C. Accession: A82304
R. Heidelberg, J. E. Elsen, J.A.; Nelson, W.C.; Clayton, R.A.; Gwinn, M.L.; Dodson, R.J.; chardson, D.; Ermolaeva, M.D.; Vamathevan, J.; Bass, S.; Qin, H.; Dragol, I.; Sellers, F. Nature 406, 477-483, 2000
A.Title: DNA Sequence of both chromosomes of the cholera pathogen Vibrio cholerae.
A; Reference number: A82035; MUID: 20406833
A; Accession: A82304
A; Status: preliminar
A; Molecule type: DNA
A; Residues: 1-264 <HEID
A; Residues: 1-264 <HEID
A; Residues: 1-264 <HEID
A; Resperimental source: serogroup 01; strain N16961; blotype El Tor
                                                                                                                                                                                                                                                                                                    3-methyl-2-oxobutanoate hydroxymethyltransferase VC0592 [imported] - Vibrio cholerae (st
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Absortited to the EMBL Data Library, June 1995
A; Description: The sequence of C. elegans cosmid C09B8.
A; Reference number: S61138
A; Accession: T15462
A; Status: preliminary; translated from GB/EMBL/DDBJ
A; Molecule type: DNA
A; Molecule type: DNA
A; Ross references: EMBL:U29612; NID:q868273; PID:q868275; PIDN:AAA68801.1; CESP:C09B8.3
A; Cross references: EMBL:U29612; NID:q868273; PID:q868275; PIDN:AAA68801.1; CESP:C09B8.3
A; Experimental source: strain Bristol N2
A; Genetics:
A; Genetics:
A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A; Genetics: A;
          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Species: Caenorhabditis elegans
C;Date: 20-Sep-1999 #sequence_revision 20-Sep-1999 #text_change 24-Nov-1999
C;Accession: T15462
R;Stellyes, L.
          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
          .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A;Map position: 1
C;Superfamily: 3-methyl-2-oxobutanoate hydroxymethyltransferase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2; Length 264;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2; Length 387;
          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
;
          5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   - Caenorhabditis elegans
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ore 42; DB;
ed. No. 16;
Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 42; DB
Pred. No. 25;
3; Mismatches
          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 42;
Pred. No.
      5,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            h
Similarity 53.3%;
8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     43.8%;
70.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 70.0'
      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     155 TLDNLQYKNLFNERN 169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  4 TODDLQYHNLSKOON 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   hypothetical protein C09B8.3
                                                                    5 QDDLQYHNLSKQQN 18
                                                                                                              66 ODNLKMHNMSFREN 79
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 PVTQDDLQYH 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              59 PVTVDDIAYH 68
   .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    13
   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                RESULT
T25651
                                                                                                                                                                                                                                      RESULT
```

g

ò

٠,,

g

õ

Ø

```
C:Comment: This enzyme, located in peroxisomes, catalyzes the oxygen-specific oxidation; this reaction is the initial step of the peroxisomal beta-oxidation system. In C. tropgene family.
C:Comment: The peroxisomes are eukaryote subcellular organelles that generate and degrad ic reactions as well as the enzymes involved are usually different from the mitochondria G:Genetics:
A:Genetics:
A:Genetics:
A:Genetics:
C:Superfamily: acyl-CoA oxidase
C:Keywords: FAD; fatty acid oxidation; flavoprotein; oxidoreductase; peroxisome
```

 Query Match
 43.8%;
 Score 42;
 DB 1;
 Length 662;

 Best Local Similarity 43.8%;
 Pred. No. 48;
 <

Search completed: September 10, 2001, 14:01:14 Job time: 213 sec

This Page Blank (uspto)

c, Appli c, Appli c, Appli c, Appli d, Appli 5206163

Sequence Seq

Sequence 4, Patent No. 520 Sequence 50, Sequence 51, Sequence 51,

Sequence Seq

ALIGNMENTS

Sequence

A STATE OF THE PARTY OF THE PAR

```
APPLICANT: NOIMELY AGINE
APPLICANT: Noward Christopher B.
APPLICANT: Unger, Roger H.
APPLICANT: Shimabbukuro, Michio
APPLICANT: Shodes, Christopher J.
APPLICANT: Rhodes, Christopher J.
APPLICANT: Hugl, Sigrum R.
APPLICANT: Hugl, Sigrum R.
APPLICANT: Corsin, Sharon
TITLE OF INVENTION: METHODS AND COMPOSITIONS RELATING
TITLE OF INVENTION: TO NO-MEDIATED CYTOTOXICITY
NUMBER OF SEQUENCES: 20
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDIUM TYPE: FLOPPY disk

COMPUTER: IBM PC Compatible
COMPUTER: IBM PC Compatible
COMPUTER: IBM PC Compatible
COMPUTER: IBM PC COMPATIBLE
SOFTWARE: Patentin Release #1.0, Version #1.30
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/09/126,109
FILING DATE: 30-JUL-1998
CLASSIFICATION DATA:
APPLICATION NUMBER: US 60/055,092
FILING APPLICATION DATA:
APPLICATION NUMBER: US 00/10.1997
PRIOR APPLICATION NUMBER: US 00/10.1998
ATTORNEY/AGENT INFORMATION:
NAME: MOMILIAN, Nabeela R.
REFERENCE/DOCKET NUMBER: UTSD:560
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION FOR SEQ ID NO: 12:
SEQUIENCE CHARACTERISTICS:
US-08-247-904B-8
US-08-767-942A-21
US-08-267-384-2
US-09-267-384-2
US-09-198-956-2
US-08-080-855-1
US-08-08-39-56-2
US-08-465-380-50
US-08-465-380-50
US-08-465-380-50
US-08-486-399-50
US-08-486-399-50
US-08-486-399-50
US-08-486-399-50
US-08-446-399-50
US-08-446-399-50
US-08-446-399-50
US-08-446-399-50
US-08-446-399-50
US-08-446-399-50
US-08-461-965-50
US-08-461-965-51
                                                                                                                                                                                                                                                                                   JS-09-249-448-51
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3: Arnold, White & Durkee P.O. Box 4433
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Thigpen, Anice
Hohmeier, Hans-Ewald
Newgard, Christopher B.
                                                                                                                                                                                                                                                                                                                                                                                                                     . Sequence 12, Application US/09126109; Patent No. 6171856; GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1146 amino acids
   COUNTRY: USA ZIP: 77210
COMPUTER READABLE FORM: MEDIUM TYPE: Floppy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TYPE: amino acid
     CITY: Houston
STATE: Texas
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ADDRESSEE:
STREET: P.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT:
APPLICANT:
                                                                                                                                                                                                                                                                                                                                                                                                        US-09-126-109-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
   38 .5
38 .5
38 .5
37 38 37
37 55 337
37 37 37
37 37 37
                                                                                                                                                                                                                                                                                                                                                                                       RESULT
     ; Search time 35.97 Seconds
(without alignments)
10.304 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Appli
Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Appli
Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence 12, Appl
Sequence 2, Appli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 3,
Sequence 3,
Sequence 2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence 2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence Sequence S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    /cgn2_6/ptodata/2/iaa/5A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/5B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6A_COMB.pep:*
/cgn2_6/ptodata/2/iaa/6B_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
/cgn2_6/ptodata/2/iaa/PCTUS_COMB.pep:*
                  GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  US-08-626-994A-3
US-08-625-9417-2
US-08-625-944A-1
US-08-625-994A-1
US-08-073-384C-8
US-08-073-384C-8
US-08-481-238-8
US-08-481-238-8
US-08-471-066B-8
                                                                                                                                                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-465-522-2
PCT-US93-11401-2
PCT-US95-07849-2
US-08-626-994A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5-08-599-491-8
5-08-756-386-8
5-08-823-516-8
5-08-682-853A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              08-930-996A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -08-484-956-8
-08-757-653-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .08-759-038-8
.08-758-314-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          US-08-100-692-1
US-08-674-030-1
                                                                                                                                                                                                                                                                                                   197339 seqs, 20590346 residues
                                                                                                                 September 10, 2001, 14:01:55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                   Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                    OM protein - protein search, using sw model
                                                                                                                                                                                                                                                   BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                  1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Issued_Patents_AA:*
                                                                                                                                                                        US-08-833-506C-26
96
                                                                                                                                                                                                                                                                                                                                                                   length: 0
length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1153
1153
1153
1153
1153
1153
339
339
351
364
833
833
833
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      0.0001
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.00000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.00000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.00000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.00000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.00000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.00000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.00000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.00000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0.0000
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Minimum DB seq
Maximum DB seq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score
                                                                                                                                                                                                    Perfect score:
                                                                                                                                                                                                                                                    Scoring table:
                                                                                                                                                                                                                    Sequence:
                                                                                                                                                                                                                                                                                                     Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Database
                                                                                                                     Run on:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Result
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Š.
```

```
19103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ΡA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       COUNTRY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-465-522-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 2.7. Application US/08314917

Sequence 2.7. Seque
                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1153;
                                                                                                                                                                                                                     Length 1146;
                                                                                                                                                                                                                                                                                      0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: USA

ZIP: 15219

COMPUTER REDABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IPM PC COMPATIBLE
COMPUTER: PATENTIN RELEASE #1.0, Version #1.25
CURREMY APPLICATION DATA:
APPLICATION NUMBER: US/08/314,917
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 96; DB 1; I
100.0%; Pred. No. 4.2e-08;
tive 0; Mismatches 0;
                                                                                                                                                                                                          100.0%; Score 96; DB 4; 1
100.0%; Pred. No. 4.2e-08;
tive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/981,344
FILING DATE: 25-NOV-1992
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         116972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NAME: SILVERMAN, AIROLD B.
REGIETRATION UNUMBER: 22 614
REPERENCE/DOCKET UNUMBER: 1169
TELECOMMUNICATION INFORMATION:
TELEFONE: (412) 566-6099
TELEFAX: (412) 566-6099
TELEX: 86617
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 1153 amino acids
                                                                                                                                                                                                                                                                                                                                                   1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SPVTQDDLQYHNLSKQQN 54
                                                                                                                                                                                                          Ouery Match 100.(
Best Local Similarity 100.(
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOLECULE TYPE: protein
                                TOPOLOGY: linear
MOLECULE TYPE: protein
US-09-126-109-12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 18; Conserva
STRANDEDNESS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TOPOLOGY:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              US-08-314-917-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-314-917-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  37
                                                                                                                                                                                                                                                                                                                                                       ð
                                                                                                                                                                                                                                                                                                                                                                                                                        셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 2. Application US/08465522
Patent No. 5882908
CENERAL INFORMATION
APPLICANT: Nussler, Andreas K.
APPLICANT: Geller, David A.
APPLICANT: Simmons, Richard L.
TITLE OF INVENTION: Oxlde Synthase And Process for Preparing Same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 100.0%; Score 96; DB 1; Length 1153; Best Local Similarity 100.0%; Pred. No. 4.2e-08; Matches 18; Conservative 0; Mismatches 0; Indels
                                              GENERAL INFORMATION:
APPLICANT: Timothy R. Billiar
APPLICANT: Edith Tzeng
APPLICANT: Andreas K. Mussler
APPLICANT: Andreas K. Mussler
APPLICANT: Macreas K. Geller
APPLICANT: Richard L. Simmons
TITLE OF INVENTION: Inducible Nitric Oxide Synthase
TITLE OF INVENTION: Gene for Treatment of Disease
NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: TBM PC COMPATIBLE
OPPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/265,046
FILING DATE: 24-JUN-1994
CLASSIFICATION: 536
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
ADDRESSEE: Lewals F. Gould, Jr.
ADDRESSEE: Eckert Seamans Cherin & Mellott
STREET: 1700 Market St. Suite 3232
                                                                                                                                                                                                                                                                                                                   ADDRESSEE: Lewis F. Gould, Jr.
ADDRESSEE: Eckert Seamans Cherin & Mellott
STREER: 1700 Market Street, Sulte 3232
CITY: Philadelphia
; Sequence 2, Application US/08265046
; Patent No. 5658565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ATTORNEY/AGENT INFORMATION:
NAME: GOULD, LEWALS F. Jr.
REGISTRATION NUMBER: 25.057
REFERENCE/DOCKET NUMBER: 1191
TELECOMMUNICATION INFORMATION:
TELEPHONE: (215) 575-6020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   INFORMATION FOR SEQ ID NO: 2: SEQUENCE CHARACTERISTICS: LENGTH: 1153 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37 SPVTQDDLQYHNLSKQQN 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ; MOLECULE TYPE: protein US-08-265-046-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CITY: Philadelphia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           amino acid
```

```
TELECOMMUNICATION INFORMATION:
TELEPHONE: (412) 566-6000
TELEFAX: (412) 566-6099
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                   37 SPVTQDDLQYHNLSKQQN 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 37 SPVTQDDLQYHNLSKQQN 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                            Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ; MOLECULE TYPE: protein PCT-US95-07849-2
                                                                                                                                                               MOLECULE TYPE: protein PCT-US93-11401-2
                                                                                                                             amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 18; Conserva
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                linear
                                                                                                                                                  linear
                                                                                                                                                                                                                                                     Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY:
                                                                                                                                                TOPOLOGY:
                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                q
                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   APPLICANT: Billiar, Timothy R.
APPLICANT: Billiar, Andreas K.
APPLICANT: Oslier, David A.
APPLICANT: Simmons, Frohard L.
TITLE OF INVENTION: CDNA Clone for Human Inducible Nitric
TITLE OF INVENTION: Oxide Synthase And Process for Preparing Same
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CURRENT APPLICATION DATA:
FILING DATE: 25-NOW.
                                               COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOSTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/465,522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 96; DB 2; I
Pred. No. 4.2e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ADDRESSEE: Arnold B. Silverman
ADDRESSEE: Eckert Seamans Cherin & Mellott
STREET: 600 Grant Street, 42nd Floor
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                 ATTORNEY/AGENT INFORMATION:
NAME: GGOLG, Jr., Lewis R.
REGISTRATION NUMBER: 25,057
REFERENCE/DOCKET NUMBER: 116972-6
TELECHONICATION INFORMATION:
TELEPHONE: (215) 575-6015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZIP: 15219
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRIOR APPLICATION DATA:
APPLICATION NUMBER: US/07/981,344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: Silverman, Arnold B.
REGISTRATION NUMBER: 22,614
REFERENCE/DOCKET NUMBER: 116972
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence 2, Application PCTUS9311401 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 100.0%; P
Matches 18; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                               INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 1153 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              37 SPVTQDDLQYHNLSKQQN 54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TOPOLOGY: linear
; MOLECULE TYPE: protein
US-08-465-522-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NUMBER OF SEQUENCES: 2
CORRESPONDENCE ADDRESS:
                                                                                                                                                                              FILING DATE:
CLASSIFICATION: 435
                                                                                                                                                                                                                                                                                                                                                                                                                        TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CITY: Pittsburgh STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     USA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 COUNTRY: US
                                  19103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PCT-US93-11401-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ŏ
```

```
RESULT 6
PCT-US95-07849-2
Sequence 2, Application PC/TUS9507849
GENERAL INFORMATION:
APPLICANT: University of Pittsburgh of the Commonwealth System of Higher APPLICANT: Education
TITLE OF INVENTION: Inducible Nitric Oxide Synthase
TITLE OF INVENTION: Gene for Treatment of Disease
NUMBER OF SEQUENCES: 2
CORRESPONDENCE 2
ADDRESSEE: Levis F. Gould, Jr.
ADDRESSEE: Levis F. Gould, Jr.
ADDRESSEE: Eckert Seamans Cherin & Mellott
STREET: 1700 Market Street, Suite 3232
CITY: Philadelphia
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                  .:
O
                                                                                                                                                                                                                                                   Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1153;
                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ZIP: 19103
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
COMPUTER: IBM PC compatible
OPERATING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: PatentIn Release #1.0, Version #1.25
CURREMY APPLICATION DATA:
APPLICATION NUMBER: PCT/US95/07849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 96; DB 5; 100.0%; Pred. No. 4.2e-08; iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                          4.2e-08;
                                                                                                                                                                                                                                                 100.0%; Score 96; DB 5;
100.0%; Pred. No. 4.2e-08
tive 0; Mismatches 0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CLASSIFICATION:
ATTORNEY/AGENT INFORMATION:
NAME: GOULD, Lewis F. Jr.
REGISTRATION NUMBER: 25,057
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      REFERENCE/DOCKET NUMBER: 11
TELECOMMUNICATION INFORMATION:
TELERAX: (412) 566-6099
TELEX: 866172
INFORMATION FOR SEQ ID NO: 2:
SEQUENCE CHARACTERISTICS:
LENGTH: 1153 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TELEPHONE: (215) 575-6020
TELEFAX: (215) 575-6015
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INFORMATION FOR SEQ ID NO: 2:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : 1153 amino acids
amino acid
                                                                                                                                                                                                                                                                                                                                            1 SPVTQDDLQYHNLSKQQN 18
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: Burnham, Martin K.
TITLE OF INVENTION:
NO. 5928895el 1gA Fc Binding Protein
NUMBER OF SEQUENCES: 4
CORRESPONDENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSE: Dechert, Price & Rhoads
STREET: 4000 Bell Atlantic Tower, 1717 Arch Stre
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 39; DB 3;
Pred. No. 48;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          OPERATING SYSTEM: DOS
SOFTWARE: FastSEO for Windows Version 2.0
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/929,417
                                                                                                 CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/626,994
FILING DATE: APILI 3, 1996
APPLICATION NUMBER: UP 77469/1995
FILING DATE: APILI 3, 1995
ATTORNEY AGENT INFORMATION:
REGISTRATION NUMBER: 33,094
REFERENCE/DOCKET NUMBER: P14595
TELECOMMUNICATION INFORMATION:
TELECOMMUNICATION INFORMATION:
TELECHONE: (703) 716-1191
TELEFAX: (703) 716-1180
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 339 amino acids
TYPE: amino acids
OPERATING SYSTEM: MS-DOS
SOFTWARE: Word Perfect 5.1+ (ASCII)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CLASSIFICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 60/027,030
FILING DATE: 24-5EP-1996
APPLICATION NUMBER: 60/040,656
FILING DATE: 10-MAR-1997
ATTORNEY-AGENT INFORMATION:
NAME: Dickinson, Q. Todd
REGISTRATION NUMBER: 28-58-545
FELECOMMUNICATION INFORMATION:
TELEBEHONE: 215/994-2222
TELEFAX:
                        SOFTWARE: Word Perfect 5.1+ (ASCI)
CURRENT APPLICATION DATA:
FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ; Sequence 2, Application US/08929417
; Patent No. 5928895
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           COUNTRY: USA
ZIP: 19103-2793
COMPUTER READABLE FORM:
MEDIUM TYPE: Diskette
COMPUTER: IBM COMPATIBLE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRANDEDNESS: not relevant
TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 46.7%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | |::|| || |:
287 PNTREDLPYHYYDKK 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 PVTQDDLQYHNLSKQ 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STATE: PA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-957-742-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-929-417-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 1; Length 339; 48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence 3, Application US/08957742

Patent No. 6017743

GENERAL INFORMATION:
TITLE OF INVENTION: Sia' 2, 3cala 1,4GlcNac 2,8-
TITLE OF INVENTION: SIALYLTRANSFERASE
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSE: Greenblum & Bernstein, P.L.C.
STREET: 1941 Roland Clarke Place
CITY: Reston
STREET: U.S.A.
COUNTRY: U.S.A.
ZIP: Z0191
COMPUTER READABLE FORM:
MEDIUM TYPE: 1,44 diskette
COMPUTER: IBM PC compatible
                                                                                                   GENERAL INFORMATION:
APPLICANT: Shulch1 TSUJI et al.
TITLE OF INVENTION: Sia' 2,3Gala 1,4G1CNAC 2,8-
TITLE OF INVENTION: SIALYLTRANSFERASE
NUMBER OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSEE: Greenblum & Bernstein, P.L.C.
STREET: 1941 Roland Clarke Place
CITY: Reston
STATE: Virginia
COUNTY: U.S.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3; Mismatches
                                                                                                                                                                                                                                                                                                                                                        COMPUTER READBLE FORM:
MEDIUM TYPE: 1.44 diskette
COMPUTER: IBM PC compatible
OPERATING SYSTEM: MS-DOS
SOFTWARE: WORD PErfect 5.1+ (ASCII)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/626,994A
FILING DATE: APril 3, 1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: UP 77469/1995
FILING DATE: April 3, 1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 39;
Pred. No.
                                                           Sequence 3, Application US/08626994A Patent No. 5798244
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REGISTRATION NUMBER: 33,094
REFREENCE/DOCKET NUMBER: P145:
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 716-1191
TELEFAX: (703) 716-1191
INFORMATION FOR SEQ ID NO: 3:
SEQUENCE CHARACTERISTICS:
LENGTH: 339 antino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRANDEDNESS: not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 46.7،
اتاتا 7; Conservative 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   287 PNTREDLPYHYYDKK 301
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2 PVTQDDLQYHNLSKQ 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; TOPOLOGY: linear
US-08-626-994A-3
                                       US-08-626-994A-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   US-08-957-742-3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
```

ö

Gaps

```
Sequence 1, Application US/08957742 Patent No. 6017743 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                       OPERATING SYSTEM:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TYPE: amino acid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRANDEDNESS:
                                                                                                                                                                                            CITY: Reston
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            US-08-073-384C-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     US-08-957-742-1
                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 1; Length 364;
52;
                                                                                                                                                                     DB 2; Length 351;
50;
                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                         APPLICANT Shuichi TSUJI et al.
TITLE OF INVENTION: Sia' 2,3Gala 1,4GlCNAC '2,8-
TITLE OF INVENTION: SIA' 2,3Gala 1,4GlCNAC '2,8-
TITLE OF SEQUENCES: 4
CORRESPONDENCE ADDRESS:
ADDRESSEE: Greenblum & Bernstein, P.L.C.
STREET: 1941 Roland Clarke Place
CITY: Reston
STATE: Virginia
COUNTRY: U.S.A.
ZIP: 20191
                                                                                                                                                                   Score 39; DB 2
Pred. No. 50;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          40.6%; Score 39; DB
46.7%; Pred. No. 52;
Live 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SOFTWARE: WORD PEFFECT 5.1+ (ASCII)
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/626,994A
FILING DATE: April 3, 1996
CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: JP 77469/1995
FILING DATE: April 3, 1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: Arnold Turk
REGISTRATION NUMBER: 33,094
REFERENCE/DOCKET NUMBER: 914595
IELECOMMUNICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                       Sequence 1, Application US/08626994A Patent No. 5798244 GENERAL INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDIUM TYPE: 1.44 diskette
COMPUTER: IBM PC compatible
OPERATING SYSTEM: MS-DOS
                                                                                                                                                                   40.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TELEPHONE: (703) 716-1191
TELEFAX: (703) 716-1180
INFORMATION FOR SEO ID NO: 1:
SEQUENCE CHARACTERISTICS:
INFORMATION FOR SEQ ID NO: 2
SEQUENCE CHARACTERISTICS:
LENGTH: 351 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 364 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 46.7
Matches 7; Conservative
                                                                                                                                                                   Query Match 40.6
Best Local Similarity 46.2
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            312 PNTREDLPYHYYDKK 326
                                                       TYPE: amino acid
STRANDEDNESS: double
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 PVTQDDLQYHNLSKQ 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      COMPUTER READABLE FORM:
                                                                                                                                                                                                                                                                 111 DDIQKHHLQKEKH 123
                                                                                                                                                                                                                                            6 DDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              amino acid
                                                                                            ; TOPOLOGY: linear
US-08-929-417-2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TOPOLOGY: linear
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                       US-08-626-994A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      US-08-626-994A-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 11
US-08-957-742-1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LENGTH:
                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence 8, Application US/08073384C

Patent No. 5541311

GENERAL INFORMATION:
CENERAL INFORM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DB 3; Length 364;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
APPLICANT: Shuichi TSUJI et al.
TITLE OF INVENTION: Sia 2,3Gala 1,4GlCNAC 2,8-
TITLE OF INVENTION: SIALYLTRANSFERASE
NUMBER OF SEQUENCES: 4
OCRESPONDENCE ADDRESS:
ADDRESSEE Greenblum & Bernstein, P.L.C.
STREET: 1941 Roland Clarke Place
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 40.6%; Score 39;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: 08/626,994
FILING DATE: April 3, 1996
APPLICATION NUMBER: JP 77469/1995
FILING DATE: April 3, 1995
ATTORNEY/AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SOFTWARE: Word Perfect 5.1+ (ASCII) CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/957,742 FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NAME: ARDOLD TULK
REGISTRATION NUMBER: 33,094
REFERENCE/POCKET NUMBER: P14595
TELECOMMUNICATION INFORMATION:
TELEPHONE: (703) 716-1191
TELEPAX: (703) 716-1191
INFORMATION: (703) 716-1191
SEQUENCE CHARACTERISTICS:
LENGTH: 364 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONNTRY: United States of America ZIP: 94104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                          STATE: Virginia
COUNTRY: U.S.A.
ZIP: 20191
COMPUTER READABLE FORM:
MEDIUM TYPE: 1.44 diskette
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             not relevant
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity 46./7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    312 PNTREDLPYHYYDKK 326
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 PVTQDDLQYHNLSKQ 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STREET: 220 Montgome
CITY: San Francisco
STATE: California
```

ö

Gaps

```
;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GENERAL INFORMATION:
APPLICANT: Dahlberg, James E.
APPLICANT: Lyamichev, Victor I.
APPLICANT: Lyamichev, Victor I.
APPLICANT: Brow, Mary Ann D.
TITLE OF INVENTION: SYNTHESIS-DEFICIENT THERMOSTABLE DNA
TITLE OF INVENTION: POLYMERASE
NUMBER OF SEQUENCES: 29
CORRESPONDENCE ADDRESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 39; DB 1; Length 833; Pred. No. 1.4e+02;
                                                                                                                                                                                                                                                                                                             Length 833;
                                                                                                                                                                                                                                                                                                                                                               6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPUTER: IBM PC compatible
COMPRAING SYSTEM: PC-DOS/MS-DOS
SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/483,043
FILING DATE: 06-JUN-1995
CLASSIFICATION NUMBER: US 08/073,384
FILING DATE: 04-JUN-1993
APPLICATION NUMBER: US 07/986,330
FILING DATE: 07-DEC-1992
ATTORNEY/AGENT INFORMATION:
NAME: CAFFOLLO, PEEFE G.
REGISTRATION NUMBER: 32,837
REFERENCE/COCKET NUMBER: 32,837
REFERENCE/COCKET NUMBER: PCNS-00613
TELECOMMULICATION INFORMATION:
TELECOMMULICATION INFORMATION:
                                                                                                                                                                                                                                                                                                                Score 39; DB 1; Pred. No. 1.4e+02; 4; Mismatches 6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ADDRESSEE: HAVERSTOCK, MEDLEN & CARROLL STREET: 220 Montgomery Street, Suite 2200 CITY: San Francisco STATE: California
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  COUNTRY: United States of America ZIP: 94104
COMPUTER READABLE FORM:
MEDIUM TYPE: Floppy disk
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Sequence 8, Application US/08483043 Patent No. 5691142
                      TELEPHONE: (415) 705-8410]
TELEFAX: (415) 397-8338
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 833 amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40.6%;
                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 41.2%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TELEFAX: 415/397-8338 INFORMATION FOR SEQ ID NO: 8:
                                                                                                                                                                                                                                                                                                                                                                                                                                                         527 PIVEKILQYRELTKLKN 543
                                                                                                                                                                                                                                                                                                                                                                                                              2 PVTQDDLQYHNLSKQQN 18
                                                                                                                                                             ; TOPOLOGY: unknown
; MOLECULE TYPE: peptide
US-08-254-359A-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .so: single
unknown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE CHARACTERISTICS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TOPOLOGY: unknown MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                                TYPE: amino acid
STRANDEDNESS: sin
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRANDEDNESS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 US-08-483-043-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       US-08-483-043-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          GENERAL INFORMATION:
APPLICANT: DAHLBERG, JAMES E.
APPLICANT: LYAMICHEV, VICTOR I.
APPLICANT: SON CHENEY IN BOLYMERASE
NUMBER OF INVENTION: 5' NUCLEASES DERIVED FROM THERMOSTABLE
ITILE OF INVENTION: DNA POLYMERASE
NUMBER OF SEQUENCES:
ADDRESSE: HAVERSTOCK, MEDLEN & CARROLL
STREET: 220 MONIGOMERY STREET, SUITE 2200
CITY: SAN FRANCISCO
STATE: CALIFORNIA
COMPUTER: LUNITED STATES OF AMERICA
ZIP: 94104
COMPUTER: LIBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPUTER: IBM PC COMPATIBLE
COMPATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 833;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 39; DB 1; Length 833
Pred. No. 1.4e+02;
4; Mismatches 6; Indels
                                          SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/073,384C
FILING DATE: 04-JUN-1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SOFTWARE: Patentin Release #1.0, Version #1.25
CURRENT APPLICATION DATA:
APPLICATION NUMBER: US/08/254,359A
                                                                                                                                 CLLASSIFICATION: 536
PRIOR APPLICATION: 536
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/986,330
FILIGO DATE: 07-DEC-1992
ATTORNEY/AGENT INFORMATION:
NAME: CATTOLL, Peter G.
REGISTATION NUMBER: 32,837
REFERENCE/DOCKET NUMBER: FCKS-00613
TELECOMMUNICATION INFORMATION:
TELEFAX: 415/397-838
INFORMATION FOR SEQ ID NO: 8:
SEQUENCE CHARACTERISTICS:
LENGTH: 833 amino acids
TYPE: amino acids
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CLASSIFICATION: 435
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 08/073,384
FILING DATE: 06-JUN-1993
PRIOR APPLICATION DATA:
APPLICATION NUMBER: US 07/986,330
FILING DATE: 07-DEC-1992
ATTORNEY AGENT INFORMATION:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NAME: CARROLL, PETER G.
REGISTRATION NUMBER: 32,837
REFERENCE/DOCKET NUMBER: FORS-01000
                                                                                                                                                                                                                                                                                                                  FORS-00613
COMPUTER: IBM PC compatible OPERATING SYSTEM: PC-DOS/MS-DOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Sequence 8, Application US/08254359A Patent No. 5614402
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    40.68;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |: : ||| |:| :| 527 PIVEKILQYRELTKLKN 543
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ouery Match
Best Local Similarity 41.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 PVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TOPOLOGY: unknown MOLECULE TYPE: peptide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FILING DATE:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-073-384C-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                US-08-254-359A-8
```

ò g

```
ö
    ó
      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
    0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                         WESULT 15

US-08-481-238-8

Sequence 8, Application US/08481238

Patent No. 5795763

BAPLICANT: DAHLBERG, JAMES E.

APPLICANT: DAHLBERG, JAMES E.

OVERREY ADDRESS: 29

NUMBER OF SEQUENCES: 29

NUMBER OF SEQUENCES: 29

NUMBER OF SEQUENCES: 20

STREET: A20 MONTGOMERY STREET, SUITE 2200

CITY: SAN FRANCISCO

STREET: CALIFORNIA

COUNTRY: SAN FRANCISCO

STATE: CALIFORNIA

COMPUTER: INP PC COMPATION

MEDIUM TYPE: TOPPY disk

COMPUTER: INP PC COMPATION

MEDIUM TYPE: TOPPY disk

COMPUTER: INP PC COMPATION

MEDIUM TYPE: TOPPY disk

COMPUTER: TOPPY disk

CLASSIFICATION NUMBER: US/08/481,238

FILING DATE:

CLASSIFICATION NUMBER: PORS - 01798

TELEPHONE: (415) 397-8338

INFORMATION FOR SEQ ID NO: 8:

SEQUENCE CHRACTERISTICS:

LENGTH HE SHA AMION CALIGS

TYPE: AMINO ACIDE

TYPE: AMINO ACIDE

TYPE: AMINO ACIDE

TYPE: AMINO ACIDE

MOLECULE TYPE: PEPLIGE

US-08-481-238-8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 39; DB 1; Length 833;
Pred. No. 1.4e+02;
4; Mismatches 6; Indels
    Indels
    .
9
    4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity 41.2%;
Matches 7; Conservative
                                                                      |: : ||| |:| :|
527 PIVEKILQYRELTKLKN 543
                                         2 PVTQDDLQYHNLSKQQN 18
  7; Conservative
Matches
                                                                                   С
                                              ŏ
```

Matches 7; Conservative 4; Mismatches 6; Indels
Qy 2 PVTQDDLQYHNLSKQQN 18
|: | | | | | | | | |
Db 527 PIVEKILQYRELTKLKN 543

Search completed: September 10, 2001, 14:01:56 Job time: 225 sec

This Page Blank (uppto)

Human Human

BLOSUM62

Scoring table: Sequence:

Perfect score:

Run on:

Total number of

Searched:

Human inos peptide
Arabidopsis thalia
Arabidopsis thalia
Human secreted pro
Fragment of human

ALIGNMENTS

Rat TNFR (p80) ext TNFR:Fc fusion pro Plasmodium falcipa

Human secreted pro Human ORFX ORF1331

Human secreted Human secreted

Rat inducible nitr Human iNOS peptide Human iNOS peptide

Human secreted pro

Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monocional antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis. Human iNOS peptide fragment PS-5104. Ą. AAW81222 standard; peptide; 18 30-APR-1999 (first entry) AAW81222; AAW81222

Homo sapiens

/note= "Asn residue amidated" Location/Qualifiers 97US-6667777 97WO-US06500 Key Modified-site 11-APR-1997; 07-APR-1997; WO9845710-A1 15-0CT-1998

α. (WEBB/) WEBBER

WPI; 1998-594495/50 Webber R;

RESULT

**Sinssyquents of the control of the A_Geneseq_0601:* Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Human iNOS peptide	Human iNOS (37-54)	Human iNOS peptide	iNOS	Human iNOS peptide	Inducible nitric o	Sequence encoded b	Nitric-oxide-synth	Hepatocyte inducib	Human inducible ni	Amino acid sequenc
SUMMARIES	OI.	AAW81222	AAW81178	AAW81278	AAW81204	AAW81208	AAW96322	AAR55764	AAR63206	AAR88464	AAW36113	AAB31724
	DB C	19	19	19	19	19	20	15	15	17	19	22
	Query Match Length DB	18	18	18	18	18	1146	1153	1153	1153	1153	1153
d₽	Query	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	Score	96	96	96	96	96	96	96	96	96	96	96
	Result No.	П	7	e	4	5	9	7	σ	6	10	11

2

```
ö
                                                                                                                                       specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autolimune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (intoS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Inducible nitric oxide synthase; 1NOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                          This invention describes an immunoassay method where a sample with a
              Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                    .;
0
                                                                                                                                                                                                                                                                                                                                                                                                  Length 18
                                                                                                                                                                                                                                                                                                                                                                                                                                  0; Indels
                                                                                                                                                                                                                                                                                                                                                                                             Score 96; DB 19;
Pred. No. 1.1e-09;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human iNOS (37-54) peptide fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Page 20; 93pp; English.
                                                                                     Example 4; Page 35; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Š
                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAW81178 standard; peptide; 18
                                                                                                                                                                                                                                                                                                                                                                                               100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 spvtgddlgyhnlskggn 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                               Query Match 100.
Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                          18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  15-0CT-1998.
                                                                                                                                                                                                                                                                                                           Invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Webber R;
                                                                                                                                                                                                                                                                                                                                              Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW81178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           N
å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

```
ô
tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psorlasis, and multiple sclerosis. This sequence represents a peptide fragment from human iNOS which is used in the method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This invention describes an immunoassay method where a sample with a specific blinding entity (e.g. a monoclonal antibody) readtive to human inducible nitric oxide synthase (iNoS) or mimics of this protein is used to detect the presence of human iNoS protein in the sample. The method can be used for the detection and quantitation of human iNOS in calls and tissues for various pathophyslological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following such as lupus, psorlasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human INOS or mimics.
                                                                                                                                                                                                  ö
                                                                                                                                                                    Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 18;
                                                                                                                                                                                                  Indels
                                                                                                                                                                  100.0%; Score 96; DB 19; 100.0%; Pred. No. 1.1e-09;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 96; DB 19;
Pred. No. 1.1e-09;
                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                AAW81278 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Fig 1; 93pp; English.
                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human iNOS peptide fragment #4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         7177399-SD16
                                                                                                                                                                                                                                 1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                     (first entry)
                                                                                                                                                                                 Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                      of the invention.
                                                                                                                    Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       æ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (WEBB/) WEBBER
                                                                                                                   18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                 30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-OCT-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Webber R;
                                                                                                                                                                                                                                                                                                                                                                                 AAW81278;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Seguence
                                                                                                                      Sequence
                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                 AAW81278
     8888888888
                                                                                                                                                                                                                                    ð
                                                                                                                                                                                                                                                               g
```

```
This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence
                                                                          Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; Mab.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Manganese containing superoxide dismutase; MnSOD; IDDM; diabetes mellitus; treatment; therapy; nitric oxide, NO; beta cell; fatty acid; lipotoxic; cytotoxic; cytokine; osteoporosis; inflammatory disease; autolmmune disease; neurodegenerative disease.
                                                                                                                                                                                                                                                                                                                                                                                              Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                              Human iNOS peptide fragment capable of binding Mab 21C10-1D10 #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 96; 100.0%; Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW96322 standard; Protein; 1146 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                         Example 3; Page 32; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Inducible nitric oxide synthase.
                                                                                                                                                                                                                                              97WO-US06500
                                                                                                                                                                                                                                                                          97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 SPVTQDDLQYHNLSKQQN 18
                 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              28-JUN-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                  WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                       ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18 AA;
                                                                                                                                                                                                                                                                                                        (WEBB/) WEBBER
                                                                                                                                                     Homo sapiens
                                                                                                                                                                                 WO9845710-A1
                                                                                                                                                                                                                                             11-APR-1997;
                                                                                                                                                                                                                                                                          07-APR-1997;
                 30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens
                                                                                                                                                                                                               15-0CT-1998
                                                                         Inducible;
                                                                                                                                                                                                                                                                                                                                      ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW96322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                      Webber
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW96322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
    qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏ
   ó;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence
                                                                                                                                                                                                                                                     Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; Mab.
   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0;
                                                                                                                                                                                                                          Human iNOS peptide fragment capable of binding Mab 6G12-H7.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 18;
   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Indels
 ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 96; DB 19;
Pred. No. 1.1e-09;
 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Mismatches
                                                                                                                                   AAW81204 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Example 3; Page 32; 93pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW81208 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ó
;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      97US-6667777.
                                              1 spvtgddlgyhnlskggn 18
                             SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 spvtgddlgyhnlskggn 18
                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 100.
Best Local Similarity 100.
Matches 18; Conservative
 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1998-594495/50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    α,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                               WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                         11-APR-1997;
                                                                                                                                                                                              30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                            15-0CT-1998
18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Webber R;
                                                                                                                                                                AAW81204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW81208;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       S
Matches
                                                                                                                      AAW81204
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW81208
                                                                                                       RESULT
                             ò
                                                           g
                                                                                                                                                                  g
```

ö

Gaps

ó

Length 18; Indels

; DB 19; : 1.1e-09; ; 0

Mismatches

ö

δ

30-JUL-1998;

11-FEB-1999

30-JUL-1997;

Ohneda M,

Clark SA,

03-MAR-1998;

```
AAQ66914 is from human hepatocyte inducible nitric oxide synthase CDNA clone pHINOS from lambda Zap II cDNA library. The original source was induced human hepatocyte RNA. HINOS cDNA plasmid is pref. transformed in E. coll SOLK (ATCC 69126). The inventors claim a clone with the cDNA sequence in AAQ66914 and a cDNA clone which encodes AARS5764. The cloning and expression of a human tissue nitric oxide synthase cDNA provides a source of the enzyme for therapeutic purposes, for example to prevent the hypotensive shock seen with
                                                                                                                                                                                                                                                                                                                                                                     cDNA clone encoding human inducible nitric oxide synthase to prevent the hypotensive shock seen with sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nitric-oxide-synthase; NO-synthase; NOS; chondrocyte; interleukin-1-beta; pESHSINOS; arthritis; hypertension; septic shock; inflammation; ischemia; dementia; obesity; agonist; antagonist; vector; CHO; Chinese hamster ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Score 96; DB 15; 100.0%; Pred. No. 1.4e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Palmer RMJ,
                                                                                                                                                                                                                      Nussler AK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR63206 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Disclosure; Fig 1; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94WO-GB00621.
                             93WO-US11401
                                                                                           92US-0981344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 93GB-0006386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (WELL ) WELLCOME FOUND LTD.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Geller DA,
                                                                                                                                                     (UYPI-) UNIV PITTSBURGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Nitric-oxide-synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Charles IG, Moncada
                                                                                                                                                                                                                                                                                 WPI; 1994-200273/24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Local Similarity
hes 18; Conser
                                                                                                                                                                                                                                                                                                                 N-PSDB; AAQ66914
                             23-NOV-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25-MAR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 26-MAR-1993;
                                                                                       25-NOV-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               cell culture
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-MAY-1995
                                                                                                                                                                                                                      Billiar TR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9423038-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         13-0CT-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR63206;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        sebsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAR63206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
      $\text{SY \text{Y \tex
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Inhibition of cytokine mediated immunotoxicity of cells can be achieved by blocking free radical production or the accumulation of the archived by blocking free radicals in that cell. Treatment of insulin dependent diabetes mellitus (IDDM) can be achieved by by blocking nitric oxide (NO) production in a pancreatic beta cell and by providing a composition or comprising an agent that reduces levels of fatty acids in the cells and protects beta-cells of the subject against libid-mediated cell cant, cells can also be protected against nitric oxide mediated cytotoxicity by introducing into the cell an antioxidising agent. The methods can be used for protecting cells against immunotoxicity mediated by, e. g. IL-1 beta, IL-1 lalpa, gamma IRN, TNF alpha, TNF beta, IL-8, IL-2, IL-6, IL-3, IL-5, IL-7, IL-9, IL-14, IL-17, IL-9, IL-14, IL-17, granulocyte-macrophage colony stimulating factor or monocyte chemoattractant protein-1. The methods can be used for the treatment of e.g. insulin-dependent diabetes mellitus (IDDM, NIDDM, obesity, wasting syndromes, short stature, osteoporosis, inflammatory. cities asses, autoimmune diseases, or neurodegenerative diseases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Protection of mammalian cells against immunotoxicity or lipotoxicity - used for treating, e.g. diabetes, obesity, wasting syndromes, osteoporosis, inflammatory diseases, autoimmune diseases or
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence encoded by the cDNA clone for human hepatocyte inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 96; DB 20; Length 1146; Pred. No. 1.4e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nitric oxide synthase; hepatocyte; hypotensive shock; therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                            Lee Y, Newgard CB;
, Unger RH;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Page 247-251; 253pp; English.
                                                                                                                                                                                                                                                                                                                                                                            Koyama K, Le
1, Thigpen A,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAR55764 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 100.0%; S
Best Local Similarity 100.0%; P
Matches 18; Conservative 0;
                                                                                                                        98WO-US15781
                                                                                                                                                                                  98US-0055092
97US-0055092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (BETA-) BETAGENE INC.
(TEXA ) UNIV TEXAS SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          neurodegenerative diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                            Hohmeier H, K
Shimabukurom,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1999-153448/13.
N-PSDB; AAX08434.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1146 AA;
WO9906059-A2
```

Sequence

ö

Gaps

ö

Indels

Length 1153;

tumor;

New human inducible nitric oxide synthase - useful for

WPI; 1994-333198/41.

28-DEC-1994

AAR55764;

g

ð

Homo sapiens

W09412645-A 09-JUN-1994

N-PSDB; AAQ77700

CDNA

Simmons RL;

S

Page

us-08-833-506c-26.rag

```
1 SPVTQDDLQYHNLSKQQN 18
                        37 spvtgddlgyhnlskggn 54
                                                                                                                                                                                                                                                                                                                                       (RAJF/) RAJFER J.
                                                                                                                                                                                                                    Homo sapiens.
                                                                                                                                                                                                                                                                                 09-MAY-1997;
                                                                                                                                                                                                                                      W09742965-A1
                                                                                                                                                                                                                                                                                                      10-MAY-1996;
                                                                                                                                                                                                                                                             20-NOV-1997.
                                                                                                                                                                                              relaxant.
                                                                                                          AAW36113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loca
Matches
                                                                 RESULT 1
                                                                                                          δ
                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ΩŽ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    g
                                                                                                                                                                                            0;
                                                   Human chondrocytes were incubated with interleukin-1-beta to induce nitric-oxide-synthase. cDNA was generated and used to construct a library in lambda ZAPII. This was screened with a 650 bp fragment of mouse inducible NO-synthase cDNA to identify the full-length clone pBSHSINOS. The insert was transferred to pSVL to give a vector capable of expressing NO-synthase in CHO cells under control of a heterologous constitutive promoter.
                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             An inducible nitric oxide syntase (iNOS = AAR88464) is the product of a CDNA clone (AAT10115) derived from human hepatocytes induced for iNOS biosynthesis. The iNOS can be obtd. by expression of the CDNA e.g. in mammalian host cells and is used in the development of selective inhibitors of NOS or to treat diseases
identifying enzyme inhibitors and stimulators, and for diagnosis and treatment of e.g. viral infections or tumours
                                                                                                                                                                                                                                                                                                                                                                             Inducible nitric oxide synthase; iNOS; hepatocyte; gene therapy; vascular occlusive disease; cancer; infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Inducible nitric oxide synthase gene - useful in gene therapy to
                                                                                                                                                                                           ;
0
                                                                                                                                                                        Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Щ
.,
                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Tzeng
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Simmons RL,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       treat, e.g. vascular occlusive disease and cancer
                                                                                                                                                                                            0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 96; DB 17;
Pred. No. 1.4e-07;
; Mismatches 0;
                                                                                                                                                                      Score 96; DB 15;
Pred. No. 1.4e-07;
                                                                                                                                                                                           Mismatches
                                                                                                                                                                                                                                                                                                                                                        Hepatocyte inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Disclosure; Page 54-58; 91pp; English.
                                Disclosure; Page 25-31; 42pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nussler AK,
                                                                                                                                                                                                                                                                                          AAR88464 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       100.0%; Sc
100.0%; Pr
tive 0;
                                                                                                                                                                                           ;
0
                                                                                                                                                                      100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95WO-US07849.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94US-0265046
                                                                                                                                                                                                                                    37 spvtgddlqyhnlskqqn 54
                                                                                                                                                                                                                1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                    (first entry)
                                                                                                                                                                    Query Match 100.
Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     affected by nitric oxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Geller DA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (UYPI-) UNIV PITTSBURGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1996-068641/07
                                                                                                                                       1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-PSDB; AAT10115
                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                WO9600006-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-JUN-1994;
                                                                                                                                                                                                                                                                                                                                    13-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                     04-JAN-1996.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Billiar TR,
                                                                                                                                                                                                                                                                                                               AAR88464;
                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seguence
                                                                                                                                                                                                                                                                    6
                                                                                                                                                                                                                                                                                 AAR88464
                                                                                                                                                                                                                                                                    RESULT
```

ŏ 셤

```
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This protein comprises human penis inducible nitric oxide synthetase (HPiNOS). Its amino acid sequence was deduced from a cDNA clone (see AAT98199) derived from human penile smooth muscle cell mRNA. The invention is directed to a method of treating erectile dysfunction in a patient by providing an agent capable of treating erectile dysfunction, and introducing an effective amount of the agent into the penile tissue of the patient. Preferably, the agent increase in the level of NOS in tissue. Preferably, the NOS is iNOS, and the agent is introduced into the corpora cavernosa of the penis. The agent is preferably an NOS inducer, an NOS protein such as HPINOS, a cDNA encoding an NOS such as HPINOS, or CDNA transformed penile cells, especially corpora cavernosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Treatment of erectile dysfunction - by introducing an agent into penile tissue, particularly for inducing cavernosal smooth muscle relaxation or increasing NOS levels
                                                                                                                                                                                                                                                                 Nitric oxide synthetase; NOS; iNOS; HPINOS; human; erectile dysfunction; impotence; gene therapy; corpora cavernosa;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 96; DB 19;
100.0%; Pred. No. 1.4e-07;
iive 0; Mismatches 0;
                                                                                                                                                                                                Human inducible nitric oxide synthetase.
AAW36113 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Claim 12; Page 38-41; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Rajfer J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (GONZ/) GONZALEZ-CADAVID N F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     96US-0017373.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    97WO-US07643
                                                                                                                               11-MAY-1998 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gonzalez-Cadavid NF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1998-008577/01.
N-PSDB; AAT98199.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Local Similarity
nes 18; Conser
```

ö

1

RESULT 1

ö

Gaps

ö

Indels

Conservative

```
Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoinmune disease; multiple sclerosis.
                                                                                                                                                                         Use of a nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, especially useful in gene therapy for enhancing and/or inducing angiogenesis and treating atherosclerosis \cdot
                                                                                                                                                                                                                                                                            The present invention relates to use of a nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase (NOS) activity for the manufacture of a composition for essentially isolated tissue perfusion treatment to enhance and/or induce anglogenesis. The nucleic acid delivery vehicle is particularly useful in gene therapy for the treatment of atherosclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human INOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%; Score 96; DB 22; 100.0%; Pred. No. 1.4e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note= "Asn residue amidated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                             Examples; Page 14-18; 39pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human 1NOS peptide fragment PS-5261.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW81223 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ;
   99EP-0202263
                                     99EP-0202263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97US-6667777.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          54
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-APR-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Verlinden
                                                                       (INTR-) INTROGENE BV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1998-594495/50.
                                                                                                                                       WPI; 2001-125729/14.
                                                                                                                                                                                                                                                                                                                                                                                                     1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Modified-site
     09-JUL-1999;
                                     09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            W09845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-0CT-1998
                                                                                                       Vogels R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW81223;
                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          37
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT 1
AAW81223
       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, used for isolated tissue perfusion treatment to enhance and induce angiogenesis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    The specification describes a method for gene therapy for enhancing and inducing angiogenesis. The method uses a nucleic acid delivery vehicle, which comprises a nucleic acid encoding nitric oxide synthase (NOS). The delivery vehicle is used for the manufacture of a pharmaceutical composition for isolated tissue perfusion treatment. The method is useful for enhancing and/or inducing angiogenesis in patients with endothelial dysfunctions, in particular arteriosclerosis. The present sequence represents an inducible NOS.
                                                                                                       Amino acid sequence of a human inducible nitric oxide synthase (NOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                       Gene therapy; anglogenesis; nucleic acid delivery; arteriosclerosis;
nitric oxide synthase; NOS; endothelial dysfunction.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Nitric oxide synthase; NOS; anglogenesis; gene therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 96; DB 22;
Pred. No. 1.4e-07;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human inducible nitric oxide synthase
     ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Fig 6; 37pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAB66724 standard; protein; 1153
AAB31724 standard; Protein; 1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ilarity 100.0%;
Conservative 0
                                                                                                                                                                                                                                                                                               2000WO-NL00482
                                                                                                                                                                                                                                                                                                                                99EP-0202263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 SPVTQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                     SFF;
                                                                                                                                                                                                                                                                                                                                                                                                                    Verlinden
                                                                                                                                                                                                                                                                                                                                                                                  (INTR-) INTROGENE BV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-123142/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                           WO200103728-A2
                                                                                                                                                                                         Homo sapiens,
                                                                                                                                                                                                                                                                                              07-JUL-2000;
                                                                                                                                                                                                                                                                                                                                09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EP1067190-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                   30-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09-APR-2001
                                                                                                                                                                                                                                                            18-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                    Vogels R,
```

Seguence

NAME OF THE PROPERTY OF THE PR

Query Match

ð g AAB66724;

ö

Gaps

ö

; 0

Length 1153; Indels

à

```
represents a peptide from human iNOS which is used in the method of the
                    invention
                                                                                                                                                                                                                                                                                                                                                                               AAW81263;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                         Sequence
                                                                                                                                                                                                                                                                                                                      AAW81263
22280
                                                                                                                                                                                                                                     QQ
                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or minics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psorlasis, and multiple sclerosis. This sequence
                                                     This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNoS) or mimics of this protein is used to detect the presence of human iNoS protein in the sample. The method can be used for the detection and quantitation of human iNoS in cells and tissues for various pathophysiological conditions such as sepsis, septic
                                                                                                                                                                         shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Inducible; nitric oxide synthase; iNOS; human; immunoassäy; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; epitope mapping.
                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                       84.4%; Score 81; DB 19; Length 15; 100.0%; Pred. No. 2.8e-07; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human iNOS peptide fragment for epitope mapping #9.
              Example 4; Page 35; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAW81288 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 4; Fig 7A; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97US-6667777.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97WO-US06500.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first, entry)
                                                                                                                                                                                                                                                                                                                                                                         Best_Local Similarity 100.
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 TQDDLQYHNLSKQQN 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                               15 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               W09845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      15-0CT-1998
                                                                                                                                                                                                                                                          invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Webber R;
                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW81288;
                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW81288
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This invention describes an immunoassay method where a sample with
                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Length 17;
                                                                         Length 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 80.5; DB 19;
Pred. No. 4e-07;
                                                                         DB 19; L
. 2.8e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       /note= "Asn residue amidated"
                                                         84.4%; Sco...
100.0%; Pred. No. ...
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human iNOS peptide fragment PS-5104.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Location/Qualifiers
17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Example 12; Page 52; 93pp; English
                                                                                                                                                                                                                                                                                                                                                        AAW81263 standard; peptide; 17 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      83.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                         Query Match
Best Local Similarity 100.
Matches 15; Conservative
                                                                                                                                                                                                          4 TODDLOYHNLSKOON 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (WEBB/) WEBBER
15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Key
Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                         30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          15-0CT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Webber R;
```

0; Indels 0; Mismatches Matches 17; Conservative

1;

1; Gaps

S S

Search completed: September 10, 2001, 14:00:24 Job time: 168 sec

```
092119 lactococcus
09hn5 pseudomonas
09hn5 pseudomonas
09fd20 streptomyce
09f8k2 carboxydoth
P74942 thermus aqu
067741 aquifex aeo
09ra63 thermus aqu
09khcl secondary e
09jyg8 neisseria m
09jtep neisseria m
09gcl xylella fas
066764 encephalomy
066763 encephalomy
066765 encephalomy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                             Q83422 mengo encep
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          O9hv74 pseudomonas
O9ule3 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09hw44 pseudomonas
007124 lactobacill
088063 streptomyce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      pyrococcus
bacillus su
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Fujisawa H., Ogura T., Hokari A., Weisz A., Yamashita J., Esumi H.;
"Inducible nitric oxide synthase in a human glioblastoma cell line.";
J. Neurochem. 64:85-91(1995).
Interpro; IPR003097; -.
Pfam. PF00667; FAD_binding; 1.
SEQUENCE 165 AA, 18466 MW; 99626E5FD04C2C3D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9v1w1
O34413
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 95; DB 4; Length 165; 100.0%; Pred. No. 1.5e-07; ive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRT; 1114 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ALIGNMENTS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 165
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                         Q89272
Q66763
Q66855
Q66855
Q68119
Q91119
Q9FD20
Q9FD3
Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                          Q9PGC1
Q66764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A. MEDLINE-95096875; PubMed=7528267;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          INDUCIBLE NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAY-1999 (TrEMBLrel. 10, 01-MAY-1999 (TrEMBLrel. 10, 01-OCT-2000 (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-MAY-2000 (TrEMBLRel. 13, 01-MAY-2000 (TrEMBLRel. 13, 01-JUN-2000 (TrEMBLRel. 14, NITRIC OXIDE SYNTHASE, NOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
     8857
8859
8859
8859
8859
8859
8859
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
11858
1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human).
     NCBI_TaxID=9606;
       094994
094994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9UD42;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9UD42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           115
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
     094994

1D OO

OD DT OO

DD DT OO

DD DE III
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09UD42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9tux8 caris famil
Q9tux8 caris famil
Q9vtk6 cavia porce
Q4456 streptomyce
Q9tws7 deinococcus
Q91018 pseudomonas
Q9x1b1 thermotoga
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               094994 homo sapien
09n175 ovis aries
09n2c9 equus cabal
09xt88 canis famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9qw28 rattus sp.
Q9r0w4 rattus norv
Q9n176 ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O9zpwl arabidopsis
                                                                                                                                                                    ; Search time 72.54 Seconds
(without alignments)
32.830 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09s5z2 lactococcus
069936 streptomyce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          homo sapien
homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             29nd42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  425026
                            GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 425026 seqs, 132305027 residues
                                                                                                                                                                       September 10, 2001, 14:11:12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Listing first 45 summaries
                                                                                                                              OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 097604
Q90w28
Q9R0w4
Q9N176
Q9ZPW1
Q9S5Z2
O69936
Q9TUX8
                                                                                                                                                                                                                                                                                                                          PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9UD42
094994
Q9N175
Q9N2C9
Q9XT88
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            09FBQ6
044568
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9RWS7
Q9I0L8
Q9X1B1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_unclassified:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_invertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_vertebrate:*
sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Match 100%
                                                                                                                                                                                                                                                               US-08-833-506C-30
95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 sp_archea:*
sp_bacteria:*
sp_fungi:*
sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Post-processing: Minimum Match 0% Maximum Match 10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sp_plant: *
sp_rodent: *
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SPTREMBL_16:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          649
11154
11147
11147
366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                           BLOSUM62
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1000.0

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

904.7

9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               111::113::14:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                46.5
46.5
46
46
46
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             995
995
995
997
977
977
977
                                                                                                                                                                                                                                                                                                     Perfect score:
                                                                                                                                                                                                                                                                                                                                                                           Scoring table:
                                                                                                                                                                                                                                                                                                                             Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Database
                                                                                                                                                                          Run on:
```

Result Š. 137 AA

PRT;

a

```
Eukaryota; Metrzoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Perissodactyla; Equidae; Equus.
NCBI_TaxID=9796;
                                                                                                                                                                                                                                                               01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
INDGCABE NITRIC OXIDE SYNTHASE (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 PALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 86.3
Best Local Similarity 94.1
Matches 16; Conservative
                                          PRELIMINARY;
                                                                                                                                                                                      Equus caballus (Horse).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                          Q9N2C9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9XT88
  RESULT
Q9N2C9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT
Q9XT88
                                                              q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            á
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ovis aries (Sheep).

Bukaryota Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Caprinae; Ovis.
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                           SEQUENCE FROM N.A.
Ogawa Y., Nishijima S., Goto M., Ida M.;
"Cloning and characterization of a novel splice valiant of human inducible nitric oxide synthase.";
Submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AB022318. BAA37123.1;
HSSP; P35228; 4NOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. Mershon J.L., Clark K.E.; "Estrogen increases the expression of iNOS in the ovine coronary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Score 95; DB 4; Length 1114; 100.0%; Pred. No. 1.3e-06; tive 0; Mismatches 0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ouery Match 94.7%; Score 90; DB 6; Length 945; Best Local Similarity 94.4%; Pred. No. 6.9e-06; Matches 17; Conservative 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                            1114 AA; 126748 MW; C1F9624774435571 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
EMBL, AF223942; AAF34710.1; -.
InterPro; IPR001433; -.
InterPro; IPR001433; -.
InterPro; IPR001709; -.
InterPro; IPR001709; -.
Pfam; PF004175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    945 AA; 108001 MW; 9A5ACFD40440A74F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        945 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                         InterPro; IPR001094; ...
InterPro; IPR001034; ...
InterPro; IPR001709; ...
InterPro; IPR003097; ...
Pfam; PF00175; oxidored_fad; 1...
Pfam; PF00667; FLAVODOXIN.
PRINTS; PR003371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     945
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9N175
Q9N175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
Q9N175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                엄
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         a
  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ACCOCC SET THE PRINCE OF THE P
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ð
```

ö

Gaps

ö

Length 137;

Score 82; DB 6; Length 137 Pred. No. 1.5e-05; 0; Mismatches 1; Indels

86.3%; 94.1%;

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
TISSUB:SPIENIC VEIN;
FULTON D., Papapetropoulos A., Zhang X., Catravas J.D., Hintze T.H.,
Sessa W.C.;
Submitted (MAY 1998) to the EMBL/GenBank/DDBJ databases.
EMBL; AF068682; AAD39341.1; -.
EMBL; P35228; 1NSI.
                                                                                                                                                                            01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
1NDGCIBLE NITRIC OXIDE SYNTHASE (FRAGMENT).
Canis familiaris (Dog).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia: Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                81.1%; Score 77; DB 6; Length 649;
88.2%; Pred. No. 0.00055;
tive 0; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       649
74304 MW; A645F80FFA9DBFB7 CRC64;
                                                                                                                                     649 AA.
                                                                                                                                       PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00667; FAD_binding; 1. PRINTS; PR00369; FLAVODOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        31 PALVQGILERVVDGPAP 47
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 ALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 88.2
Matches 15; Conservative
                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR001094; -. InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             649 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
```

2CAFB983E56F651A CRC64;

1147 AA; 130625 MW;

SEQUENCE

ö

us-08-833-506c-30.rspt

```
SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-AORTA,
MEDLINE-98431941; PubMed-9746458;
Wang X., McGregor C.G.A., Miller V.M.;
Wang X., McGregor C.G.A., Miller V.M.;
"Induction and CDNA sequence of inducible nitric oxide synthase from canine aortic smooth muscle cells.";
Am. J. Physiol. 275:H1122-H1129(1998).
EMBL; AF077821; AAC78630.1;
HSSP; P29477; INOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE-93221515; PubMed-7682072; Mood E.R., Berger H.Jr., Sherman P.A., Lapetina E.G.; Mood E.R., Berger H.Jr., Sherman P.A., Lapetina E.G.; "Hepatocytes and macrophages express an identical cytokine inducible nitric oxide synthase gene."; Biochem. Biophys. Res. Commun. 191:767-774(1993). HSSP: p29477, INOS. InterPro; IPRO01943; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Rattus sp.
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID-10118;
                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6; Length 1154;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1154 AA; 131709 MW; 42CD606E447254CB CRC64;
                                                                                                                                 01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAX-2001 (TrEMBLrel. 16, Last annotation update)
1NDUCIBLE NITRIC OXIDE SYNTHASE.
Canis familiaris (Dog)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
CYTOKINE INDUCIBLE NITRIC OXIDE SYNTHASE, INOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 60; DB 6
Pred. No. 0.56;
                                                                                   PRT; 1154 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PRT; 1147 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001094; ...
InterPro; IPR001433; ...
InterPro; IPR001709; ...
Pfam; PF00175; oxidored_fad; 1...
Pfam; PF00667; FAD_binding; 1...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         InterPro; IRR001709; ...
InterPro; IPR001709; ...
InterPro; IPR001369; ...
Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00369; FLAVDOXIN.
PRINTS; PR001801; ...
ProDom; PD001811; ... 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match 63.2%;
Best Local Similarity 81.2%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    779 ALVQGILERVVYSPAP 794
                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 ALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
                                                                          097604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9QW28
Q9QW28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1
                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                 097604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q90W28
                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ACC DOT ACC ACC DOT AC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           à
```

```
Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
STRAIN-WISTARK KYOTO.
STRAIN-WISTARK KYOTO.
STRAIN-WISTARK KYOTO.
STRAIN-WISTARK KYOTO.
STRAIN-WISTARK KYOTO.
Keinanen R.A., Vartiainen N., Koistinaho J.;
Molecular cloning and characterization of the rat inducible nitric
                                                                           ö
Score 59; DB 11; Length 1147;
Pred. No. 0.81;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 55; DB 11; Length 1147; Pred. No. 3.6;
                                                                           2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1147 AA; 130613 MW; E76B3F8407D54CF6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                              PRT; 1147 AA.
                                                                               1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL, AJ230462, CAB46089.1; --
EMBL, AJ230462, CAB46089.1; --
EMBL, AJ230464, CAB46089.1; JOINED.
EMBL, AJ230465; CAB46089.1; JOINED.
EMBL, AJ230466; CAB46089.1; JOINED.
EMBL, AJ230469; CAB46089.1; JOINED.
EMBL, AJ230469; CAB46089.1; JOINED.
EMBL, AJ230479; CAB46089.1; JOINED.
EMBL, AJ230471; CAB46089.1; JOINED.
EMBL, AJ230472; CAB46089.1; JOINED.
EMBL, AJ230473; CAB46089.1; JOINED.
EMBL, AJ230474; CAB46089.1; JOINED.
EMBL, AJ230479; CAB46089.1; JOINED.
EMBL, AJ230479; CAB46089.1; JOINED.
EMBL, AJ230479; CAB46089.1; JOINED.
EMBL, AJ230479; CAB46089.1; JOINED.
EMBL, AJ230481; CAB46089.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                        01-MAY-2000 (TrEMBLrel. 13, Crea 01-MAY-2000 (TrEMBLrel. 13, Last 01-MAR-2001 (TrEMBLrel. 16, Last INDUCIBLE NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             oxide synthase (iNOS) gene.";
Gene 234:297-305(1999).
       62.1%;
81.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
SEQUENCE 1147 AA; 130613
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    57.9%;
80.0%;
                                                                                                                                                                                    779 ALVQGILERVVDCSSP 794
                                       Best Local Similarity 81.2
Matches 13; Conservative
                                                                                                                                                2 ALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR001094; -. InterPro; IPR001433; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001709;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR003097
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10116,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               P29477
          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                               Q9R0W4;
                                                                                                                                                                                                                                                                                                                                                                                           Q9R0W4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HSSP;
                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                                       Q9R0W4
                                                                                                                                                                                                                 엄
                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                              11D
DTTTD
DDTTTD
D
DDTTTD
DDTT
```

ö

Gaps

; 0

Indels

Matches

δ g RESULT

```
Lactococcus lactis.
Bacteria; Firmicutes; Bacillus/Clostridium group; Streptococcaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Streptomyces coelicolor.
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-99194715; PubMed=10094684;
Ingmer H., Vogensen F.K., Hammer K., Kilstrup M.;
Ingmer H., Vogensen F.K., Hammer K., Kilstrup M.;
Disruption and analysis of the clpB, clpC, and clpE genes in Lactococcus lactis: ClpE, a new Clp family in gram-positive bacteria..;
J. Bacteria..;
J. Bacterio..;
FR03421; AAD01782.1;
InterPro; IPR001270;
InterPro; IPR001939;
InterPro; IPR001939;
                                                                                                                         Length 386;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 47; DB 2; Length 748;
Pred. No. 42;
InterPro; IPR000007; -.
Pfam; PF01167; Tub; 1.
PR051TE; PS01200; TUB_1; UNKNOWN_1.
PROSITE; PS01200; TUB_2; UNKNOWN_1.
SEQUENCE 386 AA; 43092 MW; 65BBBDE7851237FA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   83265 MW; E9E87F932E4A5C4A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-AUG-1998 (TrEMBLrel. 07, Created)
01-AUG-1998 (TrEMBLrel. 07, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
CLP PROTEASE ATP BINDING SUBUNIT.
                                                                                                                                                                                                                                                                                                                                                     01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
                                                                                                                       Score 47; DB 10;
Pred. No. 20;
3; Mismatches 5
                                                                                                                                                                                                                                                                                                                    748 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 842 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        6; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001943; -.
InterPro; IPR001943; -.
Pfam; PF0210004; AAA; 1.
Pfam; PF02151; UVR; 1.
PRINTS; PR00300; CLPPROTEASEA.
PROSITE; PS00870; CLPAB_1; 1.
PROSITE; PS00871; CLPAB_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49.58;
                                                                                                                         49.5%;
                                                                                                                                                                                                                    254 PSVVQGIEEEVSSSPSP 270
                                                                                                                                                                                              1 PALVQGILERVVDGPTP 17
                                                                                                                           Query Match
Best Local Similarity 52.9
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |:|:|: :::||| |
160 AVVEGLAQKIVDGDVP 175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        7; Conservative
                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2 ALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SMART; SM00382; AAA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       748 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=1358;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-MG1363;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lactococcus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                    Q9S5Z2
Q9S5Z2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               069936;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 966690
                                                                                                                                                                                                                                                                                    RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                          CLPE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CLPA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
069936
                                                                                                                                                                                                                                                                                                      098522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SO PR
                                                                                                                                                                                                ð
                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
     ö
     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnollophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
Brassicales; Brassicaceae; Arabidopsis.
                                                                                                                                                                                                                                                                              Ovis aries (Sheep).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Caprinae; Ovis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
SYRAIN-CV. COLUMBLA,
Lin X., Kaul S., Shea T.P., Fujii C.Y., Shen M., VanAken S.E.,
Lin X., Kaul S., Shea T.P., Fujii C.Y., Shen M., VanAken S.E.,
Barnstead M.E., Mason T.M., Bowman C.L., Ronning C.M., Benito M.,
Carrera A.J., Creasy T.H., Buell C.R., Town C.D., Nierman W.C.,
Fraser C.M., Venter J.C.;
"Arabidopsis thaliana chromosome II BAC T30D6 genomic sequence.";
Submitted (FRB-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AC006439; AAD15508.1; -.
                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
Mershon J.L., Clark K.E.;
"Estrogen increases the expression of iNOS in the ovine coronary
"Estrogen increases."
     ..
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 47; DB 6; Length 366;
Pred. No. 19;
     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                        artery.";
Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AF23471; AAF34707.1;
InterPro; IPR001433;
InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    794B274DA786A4A0 CRC64;
                                                                                                                                                                                         01-0CT-2000 (TrEMBLrel. 15, Created)
01-0CT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
     5;
                                                                                                                                                                                                                                               ENDOTHELIAL NITRIC OXIDE SYNTHASE (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     386 AA
                                                                                                                                                            366 AA
     Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Created)
                                                                                                                                                            PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00175; Oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00371; FPNCR.
     1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   366 366
366 AA; 40791 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 52.9%;
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-MAY-1999 (TrEMBLrel, 10, 01-MAY-1999 (TrEMBLrel, 10, 01-OCT-2000 (TrEMBLrel, 15, PUTATIVE TUBBY PROTEIN,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 PALVQGILERVVDGPTP 17
12; Conservative
                                                                                                                                                            PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                        780 LVQGILERVVDCSSP 794
                                  3 LVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NON_TER
SEQUENCE
                                                                                                                                                        09N176
09N176;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9ZPW1;
```

Q92PW1 RESULT 10

Ω

ò

QQSZPW1

ö

Gaps

ö

us-08-833-506c-30.rspt

```
Pfam; PF00667; FAD_binding; 1. PRINTS; PR00369; FLAVODOXIN. PRINTS; PR00371; FPNCR. SEQUENCE 1205 AA; 133045 MW.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1206 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-A3(2);
Harris D.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE
                                                                                                                                                                                   Q9WTK6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9FBQ6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9FBQ6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 15
                                                                                                                                                              RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9WTK6
                                                                                                                              qq
   DR DR SO
                                                                                                          δ
                                                                                                                                                                                             g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ò
                                                                                                                                                                                                                                                                                                                                                                                                  ó
                                                                                                                                                          Redenbach M., Kieser H.M., Denapaite D., Eichner A., Cullum J., Kinssli H., Hopwood D.A.;
Kinashi H., Hopwood D.A.;
"A set of ordered cosmids and a detailed genetic and physical map for the 8 Mb Streptomyces coelicolor A3(2) chromosome.";
Mol. Microbiol. 21:77-96(1996).
BMBL, AAD23861; CAA19619.1;
InterPro; IPR001270;
InterPro; IPR00139;
                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-HEART;
MEDLINE-99369487; PubMed=10442857;
Schweumer M., Bassenge E.;
Schweumer M., Bassenge E.;
"Assembly and characterization of canine heart endothelial nitric oxide synthase cDNA and 5'-flanking sequence by homology (RT-)PCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                                                                                                                                                                                 ;
0
                                                                                                                                                                                                                                                                                                                                                                            Length 842;
                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                         Oliver K., Harris D.;
Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                             Parkhill J., Barrell B.G., Rajandream M.A.;
Submitted (JUN-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                            842 AA; 92110 MW; A8ADC12FDA90197F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                            2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT; 1205 AA
                                                                                                                                                                                                                                                                                                                                                                           Score 47; DB
Pred. No. 48;
                                                                                                                                                                                                                                                                                                                                                                                                5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Created)
                                                                                                                                        STRAIN=A3(2);
MEDLINE=97000351; Pubmed=8843436;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cloning.";
Nitric Oxide 3:254-264(1999).
EMBL; AF143503; AAD52161.1; -.
HSSP; P29474; 3NOS.
InterPro; IPR001094; -.
InterPro; IPR001433; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                       PRINTS; PR00300; CLPPROTEASEA.
PROSITE; PS00870; CLPAB_1; 1.
PROSITE; PS00871; CLPAB_2; 1.
                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity 43.8%;
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAY-2000 (TrEMBLrel. 13, 01-MAY-2000 (TrEMBLrel. 13, 01-OCT-2000 (TrEMBLrel. 15, NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                2 ALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                        InterPro; IPR003593; -. Pfam; PF00004; AAA; 2. Pfam; PF02151; UVR; 1.
                                                                                                                                                                                                                                                InterPro; IPR001943; -.
                                                                                                                                                                                                                                                                                                                         SMART; SM00382; AAA; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001709; -. InterPro; IPR003097; -.
                     SEQUENCE FROM N.A.
                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                              SEQUENCE FROM N.A.
NCBI_TaxID=1902;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9615;
                                                                                  STRAIN=A3(2);
                                STRAIN=A3(2);
                                                                                                                                                                                                                                                                                                                                  Protease
                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9TUX8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        O9TUX8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   O9TUX8
 õ
```

```
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Actinomycetales; Streptomycineae; Streptomycetaceae; Streptomyces. NCBI_TaxID=1902;
                                                                                                                                                                                                                                                                                                                                                                    Cavia porcellus (Guinea pig).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ö
                                                                                            .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11; Length 1206;
                                                      6; Length 1205;
                                                                                            Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      133045 MW; C150CDEB01685BA5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EB4E792D3F9503DD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Streptomyces coelicolor.
Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
                                                                                                                                                                                                                                                                                                           Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        OJ-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
MINGGLYCOSIDE PHOSPHOTRANSFERASE (FRAGMENT).
SCD86A.01C.
                                                    Score 47; DB 6
Pred. No. 72;
2; Mismatches
                                                                                                                                                                                                                                                        PRT; 1206 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          100 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    49.5%; Score 47; DB
52.9%; Pred. No. 72;
Live 2; Mismatches
                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                        01-NOV-1999 (TrEMBLrel. 12, Create 01-NOV-1999 (TrEMBLrel. 12, Last s 01-MR-2001 (TrEMBLrel. 16, Last a ENDOTHELIAL NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             HSSP; P29474; 3NOS.
InterPro; IPR001094; -.
InterPro; IPR001094; -.
InterPro; IPR001099; -.
InterPro; IPR001709; -.
InterPro; IPR003097; -.
Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00369; FLAVODOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 133692 MW;
                                                      49.5%;
52.9%;
                                                                                                                                                    809 PGLVEALLSRVEDPPPP 825
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      810 PGLVEALLSRVEDPPPP 826
                                   Query Match
Best Local Similarity 52.5
                                                                                                                            1 PALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity 52.5.
Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 PALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
```

```
RL Submitted (AUG-2000) to the EMBL/GenBank/DDBJ databases.

RN 121
RP SEQUENCE FROM N.A.
RA Cerdeno A.M., Parkhill J., Barrell B.G., Rajandream M.A.;
RA Cardeno A.M., Parkhill J., Barrell B.G., Rajandream M.A.;
RN SEQUENCE FROM N.A.
RY SEQUENCE FROM N.A.
RY SEQUENCE FROM N.A.
RY MEDLINE-97000351; Pubmed-8843436;
RA Kinashi H., Hopwood D.A.;
RA Kinashi H., Hopwood D.A.;
RY A Redenbach M., Kieser H.M., Denapaite D., Eichner A., Cullum J.,
RY RA Kinashi H., Hopwood D.A.;
RY A Kinashi H., Hopwood D.A.;
RY A Lansfred Cosmids and a detailed genetic and physical map for RY The 8 Mb Streptomyces coelicolor A3(2) chromosome.";
RY A. A. M.D. Miscroblol. 21:77-96(1996).
BR EMBL, AL391541; CAC04254.1; -.
BR FMBL, AL391541; CAC04254.1; -.
BR SEQUENCE 100 AA; 10559 MW; ZAE37FE5F3976A79 CRC64;
COBETY MATCh
Best Local Similarity 52.4%; Pred. No. 5.3;
Matches 11; Conservative 2; Mismatches 5; Indels 3; Gaps 1;
```

Search completed: September 10, 2001, 14:11:13 Job time: 592 sec

Q Q

The state of the state of

```
September 10, 2001, 14:09:52; Search time 23.82 Seconds (without alignments) 25.886 Million cell updates/sec
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                           OM protein - protein search, using sw model
                                                                                                                                           Run on:
```

US-08-833-506C-30 95 1 PALVQGILERVVDGPTPH 18 Title: Perfect score: Sequence:

Scoring table:

93435 seqs, 34255486 residues BLOSUM62 Gapop 10.0 , Gapext 0.5 Searched:

93435 Total number of hits satisfying chosen parameters:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_39:* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

	Description	P35228 homo sapien		054705 cavia porce		O60591 homo sapien	_		P29474 homo sapien	_					_	P03815 escherichia		P45535 escherichia	053719 mycobacteri	083110 treponema p	sacchar	Q90703 gallus gall	pichia	Q06716 lactococcus	P33416 saccharomyc	Q48544 lactobacill	P48997 mus musculu	P12617 anser anser	P49294 arabidopsis	P53532 corynebacte	P31543 trypanosoma	P53533 synechococc	9	P70313 mus musculu
SUMMAKIES	ID	NS2A_HUMAN	NOS2_MOUSE	NOS2_CAVPO	NOS2_RAT	NS2D_HUMAN	NOS2_RABIT	YHCR_BACSU	NOS3_HUMAN	NOS3_BOVIN	CLPB_HAEIN	POLG_EMCV	POLG_EMCVB	POLG_EMCVD	MURB_MYCTU	CLPB_ECOLI	H101_ARATH	YHES_ECOLI	CLPB_MYCTU	CLPB_TREPA	H104_YEAST	NOS2_CHICK	PEX6_PICPA	CLPL_LACLA	HSP7_YEAST	PEPR_LACDL	INVO_MOUSE	DCMC_ANSAN	HMA2_ARATH	CLPB_CORGL	CLP_TRYBB	CLPB_SYNP7	NOS3_RAT	NOS3_MOUSE
	DB	7	7	7	-	-	7	~	-	-	-	-	-	П	_	_	7	Н	_	-	7	-	-	-	_	-		-	Н	H	-	-	-	1
	Length	1153	1144	1149	1147	1147	496	1217	1202	1204	826	2290	2292	2292	369	857	911	637	848	878	806	1136	1165	763	811	333	467	204	530	852	868	883	919	1201
ap 2	_ '		83.2					•	0		48.4	48.4	48.4		•				'n.	•	•	•	•	•	•		•	•	•	•	•	43.2	•	•
	Score	95	79	74	59	59	52	49		47	46	46	46	4	45.5	45	44	43	43	43	43	43	43		42	41	41		41	41	41	41	41	41
Poemlt	NO.	1	7	m	4	S.	9	7	ω .	0	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29	30	31	32	33

000746 emericella P04760 mus musculu P18916 rattus norv 063651 rattus norv 013472 homo saplen P33459 caprine art P2338 r multiphos P49327 homo saplen P12785 rattus norv P28941 equine herp P08246 homo saplen P34072 saccharomyc
ANG1_EMENI ACHG_RAT ACHG_RAT TP3A_HUMAN POL_CAEVC PTI_RHOCA FAS_HUMAN FAS_HUMAN FAS_RAT VGLL_HSVEB ELNE_HUMAN MKS1_YEAST
277 519 519 564 1001 1109 827 2504 2508 218 267
4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4
8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
4 6 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8

ALIGNMENTS

a

Page

```
"Structural characterization of nitric oxide synthase isoforms reveals striking active-site conservation.";
Nat. Struct. Biol. 6:233-242(1999).
-I- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     "Crystal structures of zinc-free and -bound heme domain of human inducible nitric-oxide synthase. Implications for dimer stability and comparison with endothelial nitric-oxide synthase.";
J. Biol. Chem. 274:21276-21284(1999).
                                                                                                                                                                                                                                                                                          "Continuous nitric oxide synthesis by inducible nitric oxide synthase in normal human airway epithelium in vivo."; Proc. Natl. Acad. Sci. U.S.A. 92:7809-7813(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       X-RAY CRYSTALLOGRAPHY (2.55 ANGSTROMS) OF 74-504.
MEDIJNE-99340067; Publwed-10409685;
Lid H., Raman C.S., Glaser C.B., Blasko E., Young T.A., Parkinson J.F.
Whitlow M., Poulos T.L.;
                                                                                                                                                                                                                                                     Guo F.H., de Raeve R.H., Rice T.W., Stuehr D.J., Thunnissen F.B.J.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-96647340; PubMed-7558036;
Bloch K.D., Wolfram J.R., Brown D.M., Roberts J.D. Jr., Zapol D.G.,
Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.;
"Three members of the nitric oxide synthase II gene family (NOS2A,
NOS2B, and NOS2C) colocalize to human chromosome 17.";
Genomics 27:526-530(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ç
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MCLAY J.S., Chatterjee P., Nicolson A.G., Jardine A.G., McKay N.G., Ralston S.H., Grabowski P., Haites N.E., Macleod A.M., Hawksworth G.M.; "Nitric oxide production by human proximal tubular cells: a novel
                                                     TISSUE-Glioblastoma;
MEDLINE-95155567; PubMed-7531687;
MeDari A., Zeniya M., Esumi H.;
"Cloning and functional expression of human inducible nitric oxide synthase (NOS) cDNA from a glioblastoma cell line A-172.";
J. Blochem. 116:575-581(1994).
                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-Cardiac myocytes;
BEDIINE-27304504; PubNed-9160867;
Luss H., Li R.-K., Shapiro R.A., Tzeng E., McGowan F.X., Yoneyama
Hatakayama K., Geller D.A., Mickle D.A.G., Simmons R.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDLINE-99173237; PubMed-10074942;
Fischmann T.O., Hruza A., Niu X.D., Fossetta J.D., Lunn C.A.,
Dolphin E., Prongay A.J., Reichert P., Lundell D.J., Narula S.K.,
Weber P.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Billiar T.R.;
"Dedifferentiated human ventricular cardiac myocytes express inducible nitric oxide synthase mRNA but not protein in response IL-1, TNF, IFNgamma, and LPS.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHARACTERIZATION.
MEDLINE-99389865; Pubmed-9721329;
TAJLOR B.S., Alarcon L.H., Billiar T.R.;
Inducible nitric oxide synthase in the liver: regulation and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       X-RAY CRYSTALLOGRAPHY (2.25 ANGSTROMS) OF 82-528.
Biochem. Biophys. Res. Commun. 205:85-91(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mol. Cell. Cardiol. 29:1153-1165(1997)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            TISSUE-Kidney;
MEDLINE-95165725; PubMed-7532248;
                                                                                                                                                                                                                 TISSUE∽Airway epithelium;
MEDLINE⇔95372368; PubMed∾7544004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 immunomodulatory mechanism?";
Kidney Int. 46:1043-1049(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE OF 380-473 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biokhimiia 63:766-781(1998).
                                  SEQUENCE FROM N.A.
                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHARACTERIZATION.
                                                                                                                                                                                                                                                                        Erzurum S.C.;
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@lib.ch).
                                                                                                                      THE ENZYME (BY SIMILARITY).

ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (IN CONTRAST WITH MOUSE). ASPIRIN INHIBITS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY BE EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY (BY SIMILARITY).

SUBUNIT: HOMODIMER.

TISSUE SPECIFICITY: EXPRESSED IN THE LIVER, RETINA, BONE CELLS AND AIRMAY EPITHELIAL CELLS OF THE LING, NOT EXPRESSED IN THE
WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIATES TUMORICIDAL AND BACTERICIDAL ACTIONS.

CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) ~ CITRULLINE + NITE COXIDE + N NADPH + N NADPH + M O(2) ~ CITRULLINE + COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding; Heme; Phosphorylation; Zinc; Metal-binding; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CALMODULIN-BINDING (POTENTIAL).
FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                        -1- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                    -1- INDUCTION: BY TREATMENT WITH ENDOTOXINS OR CYTOKINES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAPK)
CAPK)
CAPK)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (BY
(BY
(BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZINC.
PHOSPHORYLATION (
PHOSPHORYLATION (
PHOSPHORYLATION (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REF.
REF.
REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        REF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EEEEEE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL, L09210; AAA59171.1; -.
EMBL, L24553; AAA36375.1; -.
EMBL, X73029; CAA51512.1; -.
EMBL, U05810; AAA56666.1; -.
EMBL, U31511; AAA49041.1; -.
EMBL, U20141; AAB60366.1; -.
EMBL, AF068236; AAC19133.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   pfam: PF600657; FAD_binding; 1.
Pfam: PF60175; oxidored_fad; 1.
PRINTS; PR001369; FLAVODOXIN.
PRINTS; PR00371; FPNOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ; S75615; AAD14179.1; -. A47475; A47475.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MIM; 103,30,
InterPro; IPR001094; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR001433; -. InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  913
996
11091
110
1115
115
892
892
892
1154
1177
1177
1174
1177
1174
1177
1174
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
117
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
1177
117
117
117
117
117
117
117
117
117
117
117
117
117
117
117
117
117
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR003097; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1NSI; 07-JAN-00.
2NSI; 07-JAN-00.
4NOS; 04-FEB-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  903
978
1076
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           439
608
676
800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        23
154
177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    266
                                                                                                                                                                                                                                                                                                                   PLATELETS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    163730;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DOMAIN
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PDB;
MIM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PDB;
```

~

us-08-833-506c-30.rsp

```
1DWW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   X-RAY CRYSTALLOGRAPHY (2.35 ANGSTROMS) OF 77-496.
MEDLINE=20031637; PubMed=10562538;
Ghosh D.K., Crane B.R., Ghosh S., Wolan D., Gachhui R., Crooks C.,
Presta A., Tainer J.A., Getzoff E.D., Stuehr D.J.;
"Inducible nitric oxide synthase: role of the N-terminal beta-hairpin hook and pterin-binding segment in dimerization and
                                                                                                                                                                                                                                                                                                       Xie Q.-W., Cho H.J., Calaycay J., Mumford R.A., Swiderek K.M., Lee T.D., Ding A., Troso T., Nathan C.; "Cloning and characterization of inducible nitric oxide synthase from
                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-92357701; PubMed-1379716;
Lowenstein C.J., Glatt C.S., Bredt D.S., Snyder S.H.;
"Cloned and expressed macrophage nitric oxide synthase contrasts with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [5]
SEGUENCE FROM N.A.
STRAIN-DBA/2J, BALB/CBYJ, SJL/J, NOD/LTJ, AND B10.S/J; TISSUE-Spleen;
                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-92210618; PubMed=1372907;
Lyons C.R., Orloff G.J., Cunningham J.M.;
"Molecular cloning and functional expression of an inducible nitric
oxide synthase from a murine macrophage cell line.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE=97477482; pubMed=9334294;
Crane B.R., Arvai A.S., Gachhui R., Wu C., Ghosh D.K., Getzoff E.D. Stuehr D.J., Tainer J.A.;
"The structure of nitric oxide synthase oxygenase domain and inhibitor complexes.";
                                                                                                                                                                                                                                      Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalla, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-96088781; PubMed-7503239;
Kone B.C., Schwebel J., Turner P., Mohaupt M.G., Cangro C.B.;
"Role of NF-kappa B in the regulation of inducible nitric oxide
synthase in an MTAL cell line."
                                                                                                                                            P29477; 070515; 070516; 01-APR-1993 (Rel. 25, Created)
01-APR-1993 (Rel. 25, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYMTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
(INDUCIBLE NOS) (INOS) (MACROPHAGE NOS) (MAC-NOS).
                                 ;
;
         Length 1153;
                                0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ma R.2., Teuscher C.; Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                  Proc. Natl. Acad. Sci. U.S.A. 89:6711-6715(1992).
         Score 95; DB 1; I
Pred. No. 7.1e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 116-496.
100.0%; Scc...
100.0%; Pred. No. ...
0; Mismatches
                                                                                                                                    PRT; 1144 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Am. J. Physiol. 269:F718-F729(1995)
                                                                                                                                                                                                                                                                                             MEDLINE=92229444; PubMed=1373522;
                                                                  181 PALVQGILERVVDGPTPH 798
                                                      1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                           mouse macrophages.";
Science 256:225-228(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Science 278:425-431(1997).
                                18; Conservative
                                                                                                                                    STANDARD;
                                                                                                                                                                                                                             Mus musculus (Mouse)
         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                         enzyme.";
                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                             NCBI_TaxID=10090;
                                                                                                                                                                                                                NOS2 OR INOSL.
                                                                                                                                  NOS2_MOUSE
P29477; 070
                                                                                                             RESULT 2
NOS2_MOUSE
                                Matches
                                                                           a
                                                      ó
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation - the European Bioinformatics. Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  oxide synthase.";

Proc. Natl. Acad. Sci. U.S.A. 92:7926-7930(1995).

-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIAPES TUMORICIDAL AND BACTERICIDAL ACTIONS.

-!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN. ASPIRIN INHIBITS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY BE EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE-Macrophage;
MEDLINE-95372392; PubMed=7544010;
Amin A.R., Vyas P., Attur M., Leszczynska-Piziak J., Patel I.R.,
Weissmann G., Abramson S.B.;
"The mode of action of aspirin-like drugs: effect on inducible nitric
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NITRIC OXIDE + N NADP(+).
-!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                            Stuehr D.J.,
                                                                                                                                                                                                                   Structure of nitric oxide synthase oxygenase dimer with pterin and ubstrate.
                                                                                                                                                                                                                                                                                                                                                                              X-RAY CRYSTALLOGRAPHY (2.35 ANGSTROMS) OF 77-499.

WEDLINE-20031638; PubMed-10562539.

Crane B.R., Rosenfeld R.J., Arvai A.S., Ghosh D.K., Ghosh S.,

Tainer J.A., Stuehr D.J., Getzoff E.D.;

The terminal domain swapping and metal ion binding in nitric oxide synthase dimerization. EMBO J. 18:6271-6281(1999).
                                                                                                X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 77-496.
MEDLINE-98182450; PubMed-9516116;
Crane B.R., Arval A.S., Ghosh D.K., Wu C., Getzoff E.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -!- INDUCTION: BY TREATMENT WITH ENDOTOXINS OR CYTOKINES. -!- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL, AF065919; AAC17914.1; -.
EMBL, AF065920; AAC17915.1; -.
EMBL, AF065921; AAC17916.2; -.
EMBL, AF065923; AAC17917.1; ALT_INIT.
EMBL, AF055923; AAC17918.2; -.
PIR; A43271; A43271.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- SUBUNIT: HOMODIMER.
-!- TISSUE SPECIFICITY: MACROPHAGES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         M92649; -; NOT_ANNOTATED_CDS.
M84373; AAA39834.1; -.
U43428; AAC52356.1; -.
tetrahydrobiopterin interaction.";
EMBO J. 18:6260-6270(1999).
                                                                                                                                                                                                                                                                                                             Science 279:2121-2126(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; M87039; AAA39315.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       08-DEC-99.
04-FEB-00.
06-FEB-00.
06-FEB-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23-MAR-99.
23-MAR-99.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1NOC; 18-NOV-98
1NOS; 18-NOV-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2NOS; 18-NOV-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EFFECT OF ASPIRIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       oxide synthase."
                                                                                                                                                                                                                rainer J.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2NOD;
3NOD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1DF1;
1DWV;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      LNOD;
                                                                                                                                                                                                                                                                                    substrate.
```

```
NP_BIND
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NOS2_RAT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
 Ор
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NITRIC OXIDE + N NADP(+).

COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE BUXZME (BY SIMILARIY).

THE ENZYME (BY SIMILARIY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                    FMN (PYRIMIDINE PART) (BY SIMTLARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Cavia porcellus (Guinea pig).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
                                                                                                                                                                                                                                                                                     FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYMTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
(INDUCIBLE NOS) (INOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
          PDB; 1DD7; 29-MAR-00.
MGD; MGIS75151. Nos2.
InterPro; IPR001039; ...
InterPro; IPR001709; ...
InterPro; IPR003709; IPR005709; ...
InterPro; IPR003709; IPR005709; IPR0
                                                                                                                                                                                                                                        CALMODULIN-BINDING (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                        -> R (IN STRAIN NOD/LTJ).

-> L (IN STRAIN SJL/J).

-> F (IN STRAIN BALB/CBYJ).

-> T (IN REF. 4).

-> G (IN REF. 2).

-> G (IN REF. 2).

-> G (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Indels
                                                                                                                                                                                                      Multigene family; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 79; DB 1; I
Pred. No. 3.3e-05;
0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT; 1149 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- SUBUNIT: HOMODIMER (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                        HEME.
                                                                                                                                                                                                                                                                                                                                              ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-HARTLEY; TISSUE-Lung;
MEDLINE-98343971; Pubmed-9677342;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                130574 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83.2%;
94.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    776 ALVQGILERVVDCPTPH 792
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 ALVOGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STANDARD;
                                                                                                                                                                                                                                                      648
772
907
990
1085
104
109
211
967
                                                                                                                                                                                                      Zinc; Metal-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WITH MOUSE NOS2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity
Matches 16; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID=10141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOS2 OR NOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NOS2_CAVPO
054705;
                                                                                                                                                                                                                                    NP_BIND
NP_BIND
NP_BIND
NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                    BINDING
                                                                                                                                                                                                                                                                                                                                                                          VARIANT
                                                                                                                                                                                                                                                                                                                                                                                             VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                           VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT 3
                                                                                                                                                                                                                                                                                                                                                            METAL
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ó
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lib-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
-i - TISSUE SPECIFICITY: EXPRESSED IN THE LUNG AND COLON. NOT DETECTED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Métazoa; Chórdata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           CALMODULIN-BINDING (POTENTIAL).
FWN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE-Vascular smooth muscle;

BEDILINE-39191721;
NUNDKAWA Y., IShida N., Tanaka S.;
"Cloning of inducible nitric oxide synthase in rat vascular smooth
                                  IN THE HEART, AORTA, LIVER, KIDNEY, AND SPLEEN.
--- INDUCTION: BY LIPOPOLYSACCHARIDE (LPS) IN KIDNEY, SPLEEN, AN COLON. EXPRESSION IS REDUCED IN THE PRESENCE OF LPS IN LUNG.
--- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STRAIN "WISTAR; TISSUE "Pancreatic islets; MEDLINE-95309542; PubMed-7540573; Karlsen A.E., Andersen H.U., Vissing H., Larsen P.M., Fey S.J., Cuartero B.G., Madsen O.D., Petersen J.S., Mortensen S.B.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOS2_RAT STANDARD; PRT; 1147 AA.

006518; P97774; O35765; O35766; Q64558; Q64005; Q63267;

01-JUN-1994 (Rel. 29, Created)

01-OCT-1996 (Rel. 34, Last sequence update)

01-OCT-2000 (Rel. 40, Last annotation update)

NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1149;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ; Db 1,
.. 0.00022;
... 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Biochem. Biophys. Res. Commun. 191:89-94(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 74; DB 1;
Pred. No. 0.00022
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00667; FAD_binding; 1. Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL; AF027180; AAC33177.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              77.98;
83.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         130631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    PRINTS; PR00369; FLAVODOXIN PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity 83.3
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NADr,
family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Rattus norvegicus (Rat).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       HSSP; P29477; ZNOS.
InterPro; IPR001094; -.
InterPro; IPR001433; -.
InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR003097; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1075
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Heme; Multigene
BINDING 199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           muscle cells."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1D
DDT ACC
OCCOOCO
OCCO
OCCO
OCCOOCO
OCCOOCO
OCCO
OCCO
OCCOOCO
OCCOOCO
OCCOOCO
```

Ŋ

```
SEQUENCE OF 426-788 FROM N.A.
STRAIN=DAHL/RAPP SALT SENSITIVE STRAIN; TISSUE=Vascular smooth muscle;
MPDLINE=98195092; Pubmd=9535415;
Chen P.Y., Gladish R.D., Sanders P.W.;
"Vascular smooth muscle nitric oxide synthase anomalies in Dahl/Rapp salt-sensitive rats.";
                                                                                                                                                                                                                                                                                   STRAIN-SPRACUE-DAWLEY, TISSUE-Hepatocytes;
MEDLINE-93221515; PubMed-7682072;
Wood E.R., Berger H. Jr., Sherman P.A., Lapetina E.G.;
"Hepatocytes and macrophages express an identical cytokine inducible nitric oxide synthase gene.";
Biochem. Biophys. Res. Commun. 191:767-774(1993).
                                                                                                                                                                                                                                                                                                                                                                                 STRAIN=SPRAGUE-DAWLEY, TISSUE-Aorta;
MEDLINE-94325351; PubMed=7519448;
Geng Y.J., Almquist M., Hansson G.K.;
"cNDA cloning and expression of inducible nitric oxide synthase from rat vascular smooth muscle cells.";
Blochim. Biophys. Acta 1218:421-424(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE=97070590; PubMed=8913516; Takshara H., Onda T., Miyoshi J., Futaki S., Niwa M.; Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, and uterus.";
Mandrup-Poulsen T., Boel E., Nerup J.; "Clonding and expression of cytokine-inducible nitric oxide synthase CDNA from rat islets of Langerhans."; Diabetes 44:753-758(1995).
                                                                    STRAIN-SPRAGUE-DAWLEY; TISSUE-Astrocytes;
MEDLINE-94331594; PubMed-7513765;
Galea E., Reis D.J., Feinstein D.L.;
"Cloning and expression of inducible nitric oxide synthase from rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-WISTAR; TISSUE-Renal glomerulus; Saura M., Zaragoza C., Martinez-Dalmau R., Perez-Sala D., Lamas S.; "Advances in the studies of NO synthesis regulation in mesanglial cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             STRAIN=SPRAGUE-DAWLEY; TISSUE-Renal glomerulus;
MEDLINE-94276509; Pubmed-7516453;
Morrissey J.J., McCracken R., Kaneto H., Vehaskari M., Montani D.,
                                                                                                                                                                                       Adachi H., Iida S., Oguchi S., Ohshima H., Suzuki H., Nagasaki K., Kawasaki H., Sugimura T., Esumi H.; Molecular cloning of a cDNA encoding an inducible calmodulin-dependent nitric-oxide synthase from rat liver and its expression in COS 1 cells."; Eur. J. Blochem. 217:37-43(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Kosuga K., Yui Y., Hattori R., Sase K., Eizawa H., Aoyama 'Inoue R., Sasayama S.;
Iroue R., Sasayama S.;
Cloning of an inducible nitric oxide synthase from rat polymorphonuclear neutrophils.";
Endothelium 2:217-221(1994).
                                                                                                                                                      SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1, and uterus.";
1. Pharm. Bull. 19:1374-1376(1996).
                                                                                                                  astrocytes.";
J. Neurosci. Res. 37:406-414(1994).
                                                                                                                                                                           MEDLINE-94039059; PubMed-7693462;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Hypertension 31:918-924(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 509-740 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SECUENCE OF 479-655 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nefrologia 16:35-39(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         [8]
SEQUENCE FROM N.A.
                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                        FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Biol
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ib-sib.ch).
                                                                                                                                                              Michel T., Balligand J.-L.;
"Isolation and characterization of inos from rat cardiocytes.";
"Isolation and characterization of most submitted (SEP-1994) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY.
-!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADPH + M O(2)
                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN. ASPIRIN HINHERTS EXRRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY BE EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CAPALYTIC ACTIVITY (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HEME (BY SIMILARITY).

CALMODULIN-BINDING (POTENTIAL).
FAM (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
ZINC (BY SIMILARITY).
ZINC (BY SIMILARITY).
ZINC (BY SIMILARITY).
ZINC (BY SIMILARITY).

R -> K (IN REF. 7).
H -> Y (IN REF. 7).
                                                                                                                                                                                                                                                                                                                                                               -!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   TISSUE SPECIFICITY: IN NORMAL KIDNEY, EXPRESSED PRIMARILY IN THE MEDULLARY THICK ASCENDING LIMB, WITH MINOR AMOINTS IN THE MEDULLERY COLLECTING DUCT AND VASA RECTA BUNDLE.

INDUCTION: BY INTERFERENC GAMMA AND LIPOPOLYSACCHARIDE.
SIMILARITY: BELONGS TO THE NOS FAMILY.
Location of an inducible nitric oxide synthase mRNA in the normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
Oxidoreductase; NADP; PAD; FMN; Calmodulin-binding; Heme; Zinc; Metal-binding; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SIMILARITY).
SUBUNIT: HOMODIMER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL, 112562; AAA41720.1;
EMBL, X76881; CAA54208.1;
EMBL, D44591; BAA07994.1;
EMBL, D83661; BAA12035.1;
EMBL, AF006619; AAC16401.1;
EMBL, AF006620; AAC16402.1;
EMBL, S71597; AAB18620.1;
EMBL, S71597; AAB31028.2;
EMBL, L36063; AAC02242.1;
                                                    Kidney Int. 45:998-1005(1994).
                                                                                                            SEQUENCE OF 420-479 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL, D14051; BAA03138.1; -. EMBL, U026686. AAA85861.1; -. EMBL; U03699; AAC13747.1; -. EMBL; D12520; BAA02090.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; 1PR001094; -.
InterPro; 1PR001433; -.
InterPro; 1PR001709; -.
InterPro; 1PR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 526
651
775
910
993
108
107
112
107
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIR; JC1472; JC1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HSSP; P29477; 1NOC
                                                                                                                                         TISSUE-Myocardium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            506
620
764
900
975
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   107
112
10
10
                                                                                                                                                                                                                                                                                                                                                                                                                          THE ENZYME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NP_BIND
NP_BIND
NP_BIND
NP_BIND
NP_BIND
MP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BINDING
                             kidney.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      METAL
```

9

```
Query Match
Best Local Similarity
                                                                                                                                                                                                              P29477; 1NOC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NOS2_RABIT
019114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                               HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOS2_RABIT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOS2
  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NITTIC OXIGE 2:242-249(1998).

-I FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MARCHPHAGES, NO MEDIATES TUMORICIDAL ADD BACTERICIDAL ACTIONS. MAY BE INVOLVED IN THE PATHOGENESIS OF DILATED CARDIOMYOPATHY OR OF EXERCISE INVOLERANCE OBSERVED IN PATIENTS WITH CHRONIC HEART FAILURE.

-I CATALYTIC ACTIVITY: L-AGGININE + N NADPH + M O(2) ·· CITRULLINE + NITRIC OXIDE + N NADPH + M O(2) ·· CITRULLINE + NITRIC OXIDE + N NADPH +).

-I COPPACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FWN. ALSO REQUIRES THE REVAMENCE OF SIMILARITY.

-I ENZYME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NS2D_HUMAN STANDARD; PRT; 1147 AA.
060591; 060604;
30.MAY-2000 (Rel. 39, Created)
30.MAY-2000 (Rel. 39, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE IID (EC 1.14.13.39) (NOS, TYPE II D)
(INDUCIBLE NOS) (INOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Complete coding sequence of inducible nitric oxide synthase from human heart and skeletal muscle of patients with chronic heart
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Primates, Catarrhini, Hominidae, Homo
                                                                                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-99966690; PubMed-9881365;
Adams V., Krabbes S., Jiang H., Yu J., Rahmel A., Gielen S.,
Schuler G., Hambrecht R.;
                                                                                                                                                                                                                                                                                                                                                                                                         Score 59; DB 1; Length 1147;
Pred. No. 0.071;
                                                                                                                                          8)
                                                                                                                                                                                                                                                                                                                                                                                                                                     2; Indels
                                                                                                                                                                                                                                                                                 (IN REF. 11).

(IN REF. 5 AND 9).

(IN REF. 11).

(IN REF. 1 AND 6).

(IN REF. 2).

(IN REF. 10).
                                                                     AND 5).
                                                                                                                                        7 AND
                                                                                                                                                     REF. 4).
REF. 3).
REF. 12)
REF. 10)
REF. 11)
REF. 11)
                                                                                                                                                                                                                                                                                                                                                                  (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                     1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE-Skeletal muscle, and Heart muscle;
                                                                                                                                                                                                                                                                                                                                                                  ET -> VP
                                                                                                                            PUNKHKKKKKU
             ٨
                                                                                                                                                                                                                                                                                                                                                                                                           62.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                      Local Similarity 81.7
nes 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               779 ALVQGILERVVDCSSP 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                               2 ALVQGILERVVDGPTP 17
                                                                                                            Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SIMILARITY).
             CONFLICT
CON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                fallure."
                                                                                                                                                                                                                                                                                                                                     CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                        Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 5
NS2D_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation—the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TATALLS TRUEDLY FANCE.

W Oxidoreductase: Nable FAD:

Heme; Zinc; Metal-binding; Multigene family.

THOMAING 197 197 HEME (BY SIMILARITY)

THOMAING 506 551 FAND FAD:

THOMAING 620 651 FAN (PYRIMIDINE PART) (BY SIMILARITY).

THOMAIND 764 775 FAD (APP PART) (BY SIMILARITY).

THOMAIND 975 993 NADP (RIBOSE PART) (BY SIMILARITY).

THOMAIND 975 993 NADP (RIBOSE PART); (BY SIMILARITY).

THOMAIND 975 993 NADP (RIBOSE PART); (BY SIMILARITY).

THOMAIND 1073 108 NADP (APP PART); (BY SIMILARITY).

THOMAIND 1073 108 NADP (APP SIMILARITY).

THOMAIND 1073 107 107 2INC (BY SIMILARITY).

THOMAIND 1073 107 2INC (BY SIMILARITY).

THOMAIND 107 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
-i- SUBUNIT: HOMODIMER (BY SIMILARITY).
-i- TISSUE SPECIFICITY: EXPRESSED IN THE HEART AND SKELETAL MUSCLE DURING CHRONIC HEART FAILURE, BUT NOT IN HEALTHY INDIVIDUALS.
-i- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Oryctolagus cuniculus (Rabbit).
Sukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
NCBI_TaxID-9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 59; DB 1; Length 1147; Pred, No. 0.071;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AA; 130528 MW; FF7E4C7ABA76D820 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             496 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR001094; -.
InterPro; IPR001433; -.
InterPro; IPR001433; -.
InterPro; IPR001709; -.
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FENCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (INDUCIBLE NOS) (INOS) (FRAGMENT)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; AF049656; AAC83553.1; -. EMBL; AF051164; AAC83554.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              62.1%;
81.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             779 ALVQGILERVVDCSSP 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   2 ALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
```

-

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its modified and this statement as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NOS3.1UMAN STANDARD; PRT; 1202 AA.
NOS3.2HUMAN STANDARD; Class of the control of 
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-92340475; PubMed-1378832; Janssens S.P., Shimouchi A., Quertermous T., Bloch D.B., Bloch K.D.; "Clonding and expression of a cDNA encoding human endothellum-derived trelaxing factor/nitric oxide synthase."; J. Biol. Chem. 267:14519-14522(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Janssens S.P., Shimouchi A., Quertermous T., Bloch D.B., Bloch K.D.; J. Biol. Chem. 267:22694-22694(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=92354731; PubMed=1379542;
Marsden P.A., Schappert K.T., Chen H.S., Flowers M., Sundell C.L.,
Wilcox J.N., Lamas S., Michel T.;
"Molecular cloning and characterization of human endothelial nitric
"xide synthase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens (Human).
Westraryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostoml; Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Marsden P.A., Heng H.H., Scherer S.W., Stewart R.J., Hall A.V., Shi X.M., Tsui L.C., Schappert K.T.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51.6%; Score 49; DB 1; Length 1217; 64.3%; Pred. No. 3.6; 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PROSITE; PS00785; 5_NUCLEOTIDASE_1; FALSE_NEG.
PROSITE; PS00786; 5_NUCLEOTIDASE_2; 1.
Hypothetical protein; Hydrolase.
SEQUENCE 1217 AA; 132686 WW; 7973160CC898DCOB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam: PF01009: 5_nucleotidase; 1.
Pfam: PF00746; Gram_pos_anchor; 1.
Pfam: PF00565; SNase; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
MEDLINE=93352539; PubMed=7688726;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               FEBS Lett. 307:287-293(1992).
                                                                                                                                                                                                                                                                                                                                                                       EMBL; X96983; CAA65702.1; -.
EMBL; Z99108; CAB12747.1; -.
HSSP; P00644; 2SOB.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Subtilist; BG11596; yhcR.
InterPro; IPR000080; -.
InterPro; IPR001899; -.
InterPro; IPR00224; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best_Local Similarity 64.3
Matches 9; Conservative
   NUCLEOTIDASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            :||::||||| | |
379 EGIVDRVVDGDTIH 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5 QGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ERRATUM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOS3_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            οg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11D
DDT TDDDT TDDDT TDDDT TDDDT TDDDT TDDDT TDDDT TDDDT TDDDT TDDT TDDT
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                           Broner C.W., Eledath F.M.;

"Rabbit iducible nitric oxide synthase gene-NOS II.";

Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases.

-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY.

-!- CAPALVITC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE +

NITRIC OXIDE + N NADP(+).

-!- COPEACYOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES

TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (PYRIMIDINE PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (ADP PART) (BY SIMÎLARITY).
(FLAVIN PART) (BY SIMÎLARITY).
? (RIBOSE PART) (BY SIMÎLARITY).
? (ADP PART) (BY SIMÎLARITY).
                                                                                                                                                                                                                                                                                                                                                                       THE ENZYME (BY SIMILARITY).
-i- ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             01-OCT-1996 (Rel. 34, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT 1996 (Rel. 39, Last annotation update)
HYPOTHETICAL 132.7 KDA PROTEIN IN CSPB-GLPP INTERGENIC REGION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 1; Length 496;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MW; AOAlD303C57F0EEC CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 55; DB 1
Pred. No. 0.13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT; 1217 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- SUBUNIT: HÖMODIMER (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Bacillus/Staphylococcus group; Bacillus. NCBI_TaxID=1423;
STRAIN-NEW ZEALAND WHITE; TISSUE-Heart;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FMN (1
FAD (1
FAD (1
NADP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-97124185; PubMed-8969498;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        EMBL; U85094; AAB65618.1; -. HSSP; P00388; 1AMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           57.9%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             56397
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         154 LVQGILERVVDCSSP 168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR001433; -. InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 LVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25
149
284
367
462
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
Les 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. STRAIN=168;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Bacillus subtilis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      YHCR_BACSU
P54602;
```

NON_TER SEQUENCE

NP_BIND NP_BIND BIND NP_BIND

Query Match

Best Loca Matches

ô

YHCR_BACSU

ö

œ

```
SIMILARITY: BELONGS TO THE NOS FAMILY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 792
934
1009
1107
                                                                                                                                                                                              L10693; F
L10693; F
L10695; L10695; L10699; L10699; L10699; L10700; L107000; L107000; L107000; L107000; L107000; L10700; L10700; L10700; L107000; L107000; L107000; L107000; L
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               X76306;
X76307;
X76308;
X76309;
                                                                                                                                                                                                                                                                                                                                                                                                 L10704;
                                                                                                                                                                                                                                                                                                                                                                                                                L10705;
                                                                                                                                                                                                                                                                                                                                                                                                                                 110706;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  L26914;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   X76305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MIM; 163729;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                INIT_MET BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DOMAIN
NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NP_BIND
NP_BIND
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                LIPID
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
EMBL;
                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL:
                                                                                                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
   "Expression of constitutive endothelial nitric oxide synthase in human blood platelets."; Life Sci. 57:2049-2055(1995). [10]
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VARIANT CORONARY SPASM ASP-297.
MEDILNE-98407797, Pubbled-99737779;
Yoshimura M., Yasue H., Nakayama M., Shimasaki Y., Sumida H.,
Sugiyama S., Kugiyama K., Ogawa H., Ogawa Y., Saito Y., Miyamoto Y.,
                                                                                                                                                                                                Nadaud S.A., Bonnardeaux A., Lathrop M., Soubrier F.; Gene structure, polymorphism and mapping of the human endothelial nitric oxide synthase gene.": Biochem. Biophys. Res. Commun. 198:1027-1033(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS).
MEDLINE-99173237; PubMed-10074942;
Bischmann T.O., Hruza A., Niu X.D., Fossetta J.D., Lunn C.A.,
Dolphin E., Prongay A.J., Reichert P., Lundell D.J., Narula S.K.,
Weber P.C.;
"Structure and chromosomal localization of the human constitutive endothelial nitric oxide synthase gene."; J. Biol. Chem. 268:17478-17488(1993).
                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
MEDLINE:94333373; PubMed=7519987;
Miyahara K., Kawamoto T., Sase K., Yui Y., Toda K., Yang L.X.,
Hattori R., Aoyama T., Yamamoto Y., Doi Y., Ogoshi S.,
Hashimoto K., Kawai C., Sasayama S., Shizuta Y.;
"Cloning and structural characterization of the human endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Robinson L.J., Weremowicz S., Morton C.C., Michel T.; "Isolation and chromosomal localization of the human endothelial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Structural characterization of nitric oxide synthase isoforms reveals striking active-site conservation."; Nat. Struct. Biol. 6:233-242(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -1- ENZYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN.
-1- SUBUNIT: HOMODIMER.
-1- TISSUE SPECIFICITY: PLATELETS.
-1- DISEASE: DEFECTS IN NOS3 ARE INVOLVED IN CORONARY SPASM.
                                                                                                Liao J.K.; Submitted (DEC-1993) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nitric oxide synthase (NOS3) gene."; Genomics 19:350-357(1994).
                                                                                                                                                                                                                                                                                                                                                                                 nitric-oxide-synthase gene.";
Eur. J. Biochem. 223:719-726(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUB-Platelet;
MEDLINE-96077182; PubMed-7475956;
Sase K., Michel T.;
                                                                                                                                                               TISSUE:Placenta;
MEDLINE:94161710; PubMed-7509596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE-Placenta;
MEDLINE-94245207; PubMed-7514568;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 410-527 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE OF 1-52 FROM N.A.
                                                                                TISSUE Umbilical vein;
                                                                                                                                                  SEQUENCE FROM N.A.
                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    THE ENZYME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nakao K.;
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as also as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseelisb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CALMOULIN BINDING (BOTENTIAL).
FAN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
MYRISTATE (BY SIMILARITY).
PALMITATE (BY SIMILARITY).
PALMITATE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Myristate; Lipoprotein; Palmitate; Disease mutation; Calcium-binding; Heme; Zinc; Metal-binding; Multigene family; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HEME (BY SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR001094; ...
InterPro; IPR001433; ...
InterPro; IPR001433; ...
InterPro; IPR001709; ...
Pfam; PF00667; FAD_binding; 1...
Pfam; PF00175; oxidored_fad; 1...
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                JOINED.
JOINED.
JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOINED.
                                                                                                                                                                                                                                                       JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       JOINED
                                                                                                                                                                                                                                                                                                   JOINED
                                                                                                                                                                                                                                                                                                                                                                                                       JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                          JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         JOINED
                                                                                                                                                                       EMBL; M93718; AAA36364.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EMBL, X76311; CAA53950.1; JOEMBL, X76312; CAA53950.1; JOEMBL, X76313; CAA53950.1; JOEMBL, X76314; CAA53950.1; JOEMBL, X76315; CAA53950.1; JOEMBL, X76315; CAA53950.1; JOEMBL, X76315; CAA53950.1; JOEMBL, D26607; BAA05652.1; EMBL, S80791; AAD14336.1; PIR, $24052; S24052.
                                                                                                                                                                                        AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      X76310; CAA53950.1;
X76311; CAA53950.1;
X76312; CAA53950.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAA36365.1;
AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                     AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                        AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAA36365.1;
AAA36365.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CAA53950.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CAA53950.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAA36374.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CAA53950.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAA36365..
```

```
targeting.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DOMAIN
NP_BIND
NP_BIND
NP_BIND
NP_BIND
NP_BIND
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            LIPID
                                                          X-RAY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               METAL
       ..
                                                                                                                                                                                                                                                                                                                                                                                                                                               01-APR-1993 (Rel. 25, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC-OXIDE SYMTHASE, ENDOTHELIAL (EC 1.14.13.39) (EC-NOS) (NOS, TYPE III) (NOSIII) (ENDOTHELIAL NOS) (CONSTITUTIVE NOS) (CNOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MEDLINE-92348367; PubMed-1379225; Sessa W.C., Harrison J.K., Barber C.M., Zeng D., Durieux M.E., D'Angelo D.D., Lynch K.B., Peach M.J.; "Molecular cloning and expression of a cDNA encoding endothelial cell
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MEDLINE-96102197; PubMed-8524847;
Roblinson L.J., Michel T.;
"Mutagenesis of palmitoylation sites in endothelial nitric oxide synthase identifies a novel motif for dual acylation and subcellular
                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-93055422; PubMed-1385480; Nishida K., Harrison D.G., Navas J.P., Fisher A.A., Dockery S.P., Ulmartsu M., Nerem R.M., Alexander R.W., Murphy T.J.; Molecular cloning and characterization of the constitutive bovine a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bos taurus (Bovine).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Busconi L., Michel T.;
"Endothelial nitric oxide synthase. N-terminal myristoylation
determines subcellular localization.";
J. Biol. Chem. 268:1810-8413(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-92335295; PubMed-1378626;
Lamas S., Marsden P.A., Li G.K., Tempst P., Michel T.;
"Endothelial nitric oxide synthase: molecular cloning and
characterization of a distinct constitutive enzyme isoform.";
Proc. Natl. Acad. Sci. U.S.A. 89:6348-6352(1992).
                                                                                                                                                                                                                     DB 1; Length 1202;
ZINC.
ZINC.
E -> D (IN CORONARY SPASM).
FTId=VAR_008037.
S -> R (IN REF. 8).
G -> S (IN REF. 9).
V -> W (IN REF. 5).
V -> W (IN REF. 7).
D -> E (IN REF. 7).
MW; 93D127D6C14AC92E CRC64;
                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                    5.2;
                                                                                                                                                                                                                                                                                                                                                                                                                   PRT; 1204 AA
                                                                                                                                                                                                                                                      2; Mismatches
                                                                                                                                                                                                                   Score 48;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J. Biol. Chem. 267:15274-15276(1992)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=93231982; PubMed=7682550;
                                                                                                                                                                                                                   50.5%;
                                                                                                                                                                AA; 133157
                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
TISSUE=Aortic endothelium;
                                                                                                                                                                                                                                                                                        1 PALVOGILERVVDGPTP 17
                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          nitric oxide synthase.";
                                                                       52
488
566
1149
1193
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                    Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=9913;
   93
98
297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MYRISTOYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           PALMITOYLATION
                                                                                                                                                                                                                                                                                                                                                                                                               NOS3_BOVIN
P29473;
                                                                                          CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                     Query Match
                                                                                                                                                              SEQUENCE
                                                                       CONFLICT
                                                                                                                                             CONFLICT
                                      VARIANT
   METAL
METAL
                                                                                                                                                                                                                                        Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                               NOS3_BOVIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOS3.
                                                                                                                                                                                                                                                                                                                                                                                                                   HID DATE OF THE SERVICE OF THE SERVI
   ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                           Raman C.S., Li H., Martascy P. V. Kral V., Masters B.S., Poulos T.L.;

"Crystal structure of constitutive endothelial nitric oxide synthase:

"Crystal structure of constitutive endothelial nitric oxide synthase:

a paradigm for pterin function involving a novel metal center.";

Call 95:939-950(1998).

-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS IMPLICATED IN VASCULAR SMOOTH MUSCLE RELAXATION THROUGH A CGMP-MEDIATED SIGNAL TRANSDUCTION PATHMAY. NO MEDIATES VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF) INDUCED ANGIOGENESIS IN CORONARY VESSELS AND PROMOTES BLOOD CLOTTING THROUGH THE ACTIVATION OF PLATELETS.

-!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) - CITRULLINE + NITRIC OXIDE + N NADP(+).

-!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FWN. ALSO REQUIRES.
                                                                                                                                                                                                                                                                                                                                                    TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EHPTLEWFAAL -> GAPHTGVVRGP (IN REF. 3).
S -> Y (IN REF. 3).
T -> P (IN REF. 3).
T -> A (IN REF. 3).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CALMODULIN BINDING (POTENTIAL).
FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ALDA PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Myristate;
Lipoprotein; Palmitate; Phosphorylation; Calcium-binding; Heme;
Sinc; Metal-binding; Multigene family; 3D-structure.
INT MET 0 0
                                                                                                                                                                                                                                                                                                                                                                                  -:- ENZYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PHOSPHORYLATION (BY CAPK).
C -> R (IN REF. 3).
Proc. Natl. Acad. Sci. U.S.A. 92:11776-11780(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SA (IN REF. 3).
L -> V (IN REF. 3).
WF -> LV (IN PE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -> LV (IN REF. 3).
                                           CRYSTALLOGRAPHY (1.9 ANGSTROMS) OF 66-481
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C -> R (IN REF.
Y -> I (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                       SUBUNIT: HOMODIMER. SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MYRISTATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PALMITATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PALMITATE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ZINC
                                                              MEDLINE-99091052; PubMed-9875848;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            InterPro; IPR003097; -.
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL; M99057; AAA30667.1; -.
EMBL; M89952; AAA30494.1; -.
EMBL; M95674; AAA30669.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PDB; INSE; 18-MAY-99.
PDB; ASE; 25-MAY-99.
PDB; 4NSE; 18-MAY-99.
PDB; 4NSE; 18-MAY-99.
InterPro; IPR001094; ...
InterPro; IPR001433; ...
InterPro; IPR001433; ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                511
681
805
946
1124
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   185
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              740
803
856
906
1041
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              185
491
650
794
936
1011
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14
25
100
142
142
164
454
458
                                                                                                                                                                                                                                                                                                                                                                             THE ENZYME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       INIT_MET
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MOD_RES
CONFLICT
```

g

CLPB_HAEIN

ô 合

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                          21-JUL-1986 (Rel. 01, Created)
21-JUL-1986 (Rel. 01, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
15-DEC-1998 (Rel. 37, Last annotation vpdate)
6ENOME POLYPROTEIN (CONTAINS: COAT PROTEINS VP1 TO VP4; CORE PROTEINS
P2A TO P2C, P3A; GENOME-LINKED PROTEIN VPG; PICORNAIN 3C
(EC 3.4.22.28) (PROTEASE 3C) (P3C); RNA-DIRECTED RNA POLYMERASE P3D
(EC 2.7.7.48)].
                                                                                                                                                                                                                                                                                                                                           Viruses; ssRNA positive-strand viruses, no DNA stage; Picornaviridae;
Cardiovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                 PEDLINE-84169586; Pubwed-6324136; Palmenberg A.C., Kirby E.M., Janda M.R., Drake N.L., Duke G.M., Potratz K.E., Collett M.S.;
Potratz K.E., Collett M.S.;
The nucleotide and deduced amino acid sequences of the encephalomyocarditis viral polyprotein coding region.";
Nuclet Acids Res. 12:2969-2985(1984).
1- FUNCTION: P3C POLYPEPTIDE IS A PROTEASE THAT CLEAVES AT CERTAIN O/G SITES IN THE POLYPROTEIN. IT MAY BE A CYSTEINE PROTEASE.
1- SUBUNIT: THE VIRUS CAPSID IS COMPOSED OF 60 ICOSAHEDRAL UNITS, EACH OF WHICH IS COMPOSED OF ONE COPY EACH OF PROTEINS VP1, VP2, VP3, AND VP4.
1- PTM: SPECIFIC ENZYMATIC CLEAVAGES IN VIVO YIELD MATURE PROTEINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Polyprotein; Coat protein; Core protein; Transferase;
RNA-directed RNA polymerase; Hydrolase; Thiol protease; Myristate.
PROPEP 1 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             GENOME-LINKED PROTEIN VPG (H).
PICORNAIN 3C (P22).
RNA-CLIRECTED RNA POLYMERASE P3D (E).
MYRTSTATE (BY SIMILARITY).
PROTEASE (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY C3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PROTEASE (POTENTIAL).
W; 26BC81BB7CF68CB5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              COAT PROTEIN VP4 (1)
COAT PROTEIN VP2 (1)
COAT PROTEIN VP3 (6)
COAT PROTEIN VP3 (6)
CORE PROTEIN P2A (6)
CORE PROTEIN P2C (1)
CORE PROTEIN P2C (1)
                                                                                                                                                PRT; 2290 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pfam; PF00680; RNA_dep_RNA_pol; 1.
Pfam; PF00910; RNA_helicase; 1.
Pfam; PF00073; rhv; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      255756 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL, X00463; CAA25152.1; -. PIR; A03906; GNNYE. HSSP; P12296; 1MEC.
                                                                                                                                                                                                                                                                                                                                   Encephalomyocarditis virus
                         2 ALVOGILERVVDGPTP 17
                                                                                                                                                STANDARD:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             InterPro; IPR000605; -. InterPro; IPR001205; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001676; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1802
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1518 160
1606 162
1626 183
1831 229
68 1784 178
1802 180
2290 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEROPS; C03.009; -. MEROPS; U29.001; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID-12104;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         193
                                                                                                                                                POLG_EMCV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ACT_SITE
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIPID
                                                                                                                           POLG_EMCV
ID POLG
                                        q
                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ő
                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
STRAIN-ED, KW20, KW20, ATCC 51907;
STRAIN-ED, KW20, PubMed-7542800;
Fleischmann R.D., Adams W.D., White O., Clayton R.A., Kirkness E.F.,
Kerlavage A.R., Bult C.J., Tomb J.-F., Dougherty B.A., Merrick J.M.,
McKenney K., Sutton G., Fitzhugh W., Fields C.A., Gocayne J.D.,
Scott J.D., Shirley R., Liu L.-T., Glodek A., Kelley J.M.,
Weidman J.F., Phillips C.A., Spriggs T., Hedblom E., Cotton M.D.,
Utterback Tr., Hanna M.C., Nguyan D.T., Sauddek D.M., Brandon R.C.,
Eline L.D., Fritchman J.L., Fuhrmann J.L., Geoghagen N.S.M.,
Gnehm C.L., McDonald L.A., Small K.V., Fraser C.M., Smith H.O.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Science 269:496-512(1995).
--- SUBUNIT: THOUGHT TO BE AN ATPASE SUBUNIT OF AN INTRACELLULAR ATP-DEPENDENT PROTEASE (BY SIMILARITY).
--- SIMILARITY: BELONGS TO THE CLPA/CLPB FAMILY.
                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Proteobacteria; gamma subdivision; Pasteurellaceae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    "Whole-genome random sequencing and assembly of Haemophilus influenzae \mathrm{Rd}.\:";
                                                               Length 1204;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         48.4%; Score 46; DB 1; Length 856; 43.8%; Pred. No. 7.7; ive 6; Mismatches 3; Indels
                                                                                                        6; Indels
  D017210062ABE4B0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  B8958ED9BD03EA3B CRC64;
                                                               ä
                                                                                                                                                                                                                                                                                                             01-NOV-1995 (Rel. 32, Created)
01-NOV-1995 (Rel. 32, Last sequence update)
01-OCT-1996 (Rel. 34, Last annotation update)
CLPB PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ATP (POTENTIAL).
                                                             DB 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                        Mismatches
                                                             Score 47;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001270; -.
InterPro; IPR001270; -.
Prints; PR00300; CLPPROTEASEA.
PROSITE; PS00870; CLPAR_1; 1.
PROSITE; PS00871; CLPAR_2; 1.
Chaperone; ATP-binding; Repeat.
DOMAIN 161
  133155 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               95837 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; U32767; AAC22518.1; -.
                                                             49.5%;
52.9%;
                                                                                                                                                                                    808 PGLVEALLSRVEDPPPP 824
                                                         Query Match
Best Local Similarity 52.9
Matches 9; Conservative
                                                                                                                                            1 PALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                          STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       213
                                                                                                                                                                                                                                                                                                                                                                                                                                  Haemophilus influenzae
1204 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   P21346; 1GRJ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  856 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 7; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID:727;
                                                                                                                                                                                                                                                                                                                                                                                                               CLPB OR HI0859
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TIGR; HI0859;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Haemophilus
                                                                                                                                                                                                                                                                                        CLPB_HAEIN
P44403;
  SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NP_BIND
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
```

(BETA). (ALPHA)

```
CHAIN
LIPID
ACT_SITE
ACT_SITE
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CHAIN
CHAIN
CHAIN
CHAIN
                                                                                                                                                                                                                                                                                                                                                        POLG_EMCVD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                                                                                                                                                                   qq
                                                                                                                                                                                                                                                                                                                                                                           HID DO NOT THE FETT THE PROPERTY OF THE PARTY OF THE PART
  FT
FT
SO
                                                                                                                                                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REMBL; M2497, CANTER

REMBL; M2497, CANTER

RESSP, P12296; 1MEC.

DR MEROPS; C03.009; --

DR MEROPS; U39.001; --

DR InterPro; IPR001205; --

DR InterPro; IPR001505; --

DR Pfam; PF00680; RNA_dep_RNA_pol; 1.

DR Pfam; PF000703; rNA' 3.

RW Polyprotein; Coat protein; Core protein; Transferase;

RW Polyprotein; Coat protein; Core protein; Transferase;

RW RNA-directed RNA polymerase; Hydrolase; Thiol protease;

RW RNA-directed RNA polymerase; Hydrolase; Myristate.

Thomas Protein; Coat protein; Coat protein; Transferase;

RW RNA-directed RNA polymerase; Hydrolase; Myristate.
                                                                                                                                                                                                                                                                                                        01-AUG-1990 (Rel. 15, Created)
01-AUG-1990 (Rel. 15, Last sequence update)
15-DEC-1998 (Rel. 37, Last anotation update)
16-DEC-1998 (Rel. 37, Last anotation sequence)
16-DEC-1998 (Rel. 37, Last anotation sequence)
P2A TO P2C, P3A; GENOME-LINKED PROTEIN VPG; PICORNAIN 3C
REC 3.4.22.28) (PROTEASE 3C) (P3C); RNA-DIRECTED RNA POLYMERASE P3D
(EC 2.7.7.48)].
Encephalomyocarditis virus (strain emc-b nondiabetogenic).
Viruses; SSRNA positive-strand viruses, no DNA stage; Picornaviridae;
                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           variants of encephalomyocarditis virus";

Virology 170:280-287(1989).

-!- FUNCTION: PAC POLYPEPTIDE IS A PROTEASE THAT CLEAVES AT CERTAIN Q/G SITES IN THE POLYPROTEIN. IT MAY BE A CYSTEINE PROTEASE.

-!- SUBUNIT: THE VIRUS CAPSID IS COMPOSED OF 60 ICOSAHEDRAL UNITS, EACH OF WHICH IS COMPOSED OF ONE COPY EACH OF PROTEINS VP1, VP2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -1- PTM: SPECIFIC ENZYMATIC CLEAVAGES IN VIVO YIELD MATURE PROTEINS:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE-89243189; PubMed-2541543;
Bae Y.S., Eun H.M., Yoon J.W.;
"Genomic differences between the diabetogenic and nondiabetogenic
                                                                                .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                COAT PROTEIN VP4 (RHO).
COAT PROTEIN VP2 (BETA).
COAT PROTEIN VP3 (GAMMA).
COAT PROTEIN VP3 (GLPHA).
CORE PROTEIN P2A (G).
CORE PROTEIN P2B (I).
CORE PROTEIN P2B (I).
CORE PROTEIN P3C (F).
GENOME-LINKED PROTEIN VPG (H).
PICORNAIN 3C (P22).
                                      DB 1; Length 2290;
                                                                                4; Indels
                                                                                                                                                                                                                                                                      PRT; 2292 AA
                                                                             1; Mismatches
                                      Score 46;
Pred. No.
                                    48.48;
64.38;
                                                                                Conservative
                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       137
393
624
901
1058
1194
1519
1607
1627
                                                                                                                    5 QGILERVVDGPTPH 18
                   Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VP3, AND VP4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=12105;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Cardiovirus
                                                                                                                                                                                                                                                                      POLG_EMCVB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CHAIN
CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CHAIN
                                                                                                                                                                                                                                              POLG_EMCVB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CHAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CHAIN
                                                                                                                         ò
                                                                                                                                                              a
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BMBL outstation-the European Bioinformatics. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a alicense agreement (See http://www.isb-sib.ch/announce/or send an email to license@ibs-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-FEB-1996 (Rel. 33, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
GENOME POLYPROTEIN [CONTAINS: COAT PROTEINS VP1 TO VP4; CORE PROTEINS P2A TO P2C, P3A; GENOME-LINKED PROTEIN VPG; PICORNAIN 3C (EC 3.4.22.28) (PROTEASE 3C) (P3C); RNA-DIRECTED RNA POLYMERASE P3D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Encephalomyocarditis virus (strain emc-d diabetogenic).
Viruses; ssRNA positive-strand viruses, no DNA stage; Picornaviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    variants of encephalomyocarditis virus.";
Virology 170:280-287(1989).
-!- FUNCTION: P3C POLYPEPTIOE.
Q/G SITES IN THE POLYPROTEIN. IT MAY BE A CYSTEINE PROTEASE.
-!- SUBUNIT: THE VIRUS CAPSID IS COMPOSED OF 60 ICOSAHEDRAL UNITS,
EACH OF WHICH IS COMPOSED OF ONE COPY EACH OF PROTEINS VP1, VP2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VP3, AND VP4.
-!- PTM: SPECIFIC ENZYMATIC CLEAVAGES IN VIVO YIELD MATURE PROTEINS.
-!- SIMILARITY: THE PROTEASE BELONGS TO PEPTIDASE FAMILY C3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Polyprotein; Coat protein; Core protein; Transferase;
RNA-directed RNA polymerase; Hydrolase; Thiol protease; Myristate.
PROPEP 1 67
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bae Y.S., Eun H.M., Yoon J.W.; "Genomic differences between the diabetogenic and nondiabetogenic
RNA-DIRECTED RNA POLYMERASE P3D (E)
MYRISTATE (BY SIMILARITY).
PROTESE (POTENTIAL).
PROTEASE (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                           Score 46; DB 1; Length 2292;
Pred. No. 22;
1; Mismatches 4; Indels
                                                                                                                                                                                               8540D0EB1437E8D4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COAT PROTEIN VP4 (RHO).
COAT PROTEIN VP2 (BETA).
COAT PROTEIN VP3 (GAMMA).
COAT PROTEIN VP1 (ALPHA).
CORE PROTEIN P2A (G).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2292 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pfam; PF00680; RNA_dep_RNA_pol; 1.
Pfam; PF00910; RNA_helicase; 1.
Pfam; PF00073; rhv; 3.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
MEDLINE=89243189; VLAMEDLINE=89243189; VLAMEDLINE=892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL; M22458; AAA43034.1; -. PIR; A31473; GNNYED.
                                                                                                                                                                                                                                                                                                                                                      48.48;
                                                                                                                                                                                               255495
                                                                                                                                                                                                                                                                                                                                                                                                    64.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               || |||: ||| |
1832 QGALERLPDGPRIH 1845
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          InterPro; IPR00605; -. InterPro; IPR001205; -. InterPro; IPR001676; -.
     2292
68
1786
                                                                                                                                                 1804
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 5 QGILERVVDGPTPH 18
                                                                                                                                                 1804 180
2292 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEROPS; C03.009; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1MEC.
                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=12106;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        HSSP; P12296;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  POLG_EMCVD
P17594;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cardiovirus
```

12

1,

```
ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-9825987; PubMed-9634230; Carnier T., Churcher C., Harris D., Gordon S.V., Elgimeier K., Gas S., Barry C.E. III, Takaia F., Badcock K., Basham D., Brown D., Chillingworth T., Connor R., Davies R., Deviln K., Feltwell T., Gentles S., Hamlin N., Holroyd S., Hornsby T., Jagels K., Krogh A., McLean J., Moule S., Murphy L., Oliver S., Osborne J., Quall M.A., Rajandream M.A., Rogers J., Rutter S., Seeger K., Skelton S., Squares S., Sqares R., Sulston J.E., Taylor K., Whitehead S., Barrell B.G.; Squares S., Sqares R., Sulston J.E., Deciphering the biology of Mycobacterium tuberculosis from the Complete genome sequence.";
                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                               01-0CT-1996 (Rel. 34, Created)
01-0CT-1996 (Rel. 34, Last sequence update)
30-MAT-2000 (Rel. 39, Last annotation update)
ACETYLENOLPYRUVOYLGLUCOSAMINE REDUCTASE (EC 1.1.1.158) (UDP-N-ACETYLENOLPYRUVOSAMINE REDUCTASE (EC 1.1.1.158) (UDP-N-MURB OR RV0482 OR MTCY20G9.08.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Bacteria; Firmicutes; Actinobacteria; Actinobacteridae;
Actinomycetales; Corynebacterineae; Mycobacteriaceae; Mycobacterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Peptidoglycan synthesis; Cell wall; Cell division; Oxidoreductase;
NADP; Flavoprotein; FAD.
SEQUENCE 369 AA; 38521 MW; 50AC021602ED9822 CRC64;
CORE PROTEIN P2B (I).
CORE PROTEIN P2C (F).
CORE PROTEIN P3A.
CORE PROTEIN P3A.
PICORNAIN 3C (P22).
RNA-DIRECTED RNA POLYMERASE P3D (E).
                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                -i- FUNCTION: CELL WALL FORMATION (BY SIMILARITY).
-i- CATALYTIC ACTIVITY: UDP-N-ACETYLMURAMATE + NADP(+) =
UDP-N-ACETYL.3-O-(1-CARBOXYVINYL)-D-GLUCOSAMINE + NADPH.
-i- COFACTOR: FAD (BY SIMILARITY).
-i- PATHMAY: PEPTIDOGLYCAN BIOSYMTHESIS.
-i- SUBCELLULAR LOCATION: CYTOPLASMIC (PROBABLE).
-i- SIMILARITY: BELONGS TO THE MURB FAMILY.
                                                                                                                                                                                                             Score 46; DB 1; Length 2292;
                                                                                                                                                                                                                                             4; Indels
                                                                                                                                         PROTEASE (POTENTIAL).
                                                                                                       MYRISTATE (BY SIMILARITY). PROTEASE (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                      369 AA
                                                                                                                                                                                                                           Pred. No. 22;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                    PRT;
                                                                                                                                                                                                             48.48;
64.38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; Z77162; CAB00943.1; -. HSSP; P08373; IMBT.
                                                                                                                                                         AA; 255426
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Mycobacterium tuberculosis.
                                                                                                                                                                                                           Query Match
Best Local Similarity 64.3
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                  || |||: ||| |
1832 QGALERLPDGPRIH 1845
                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TubercuList; Rv0482; -.
                   1519
1607
1627
1832
2292
68
1786
1804
                                                                                                                                                                                                                                                                             5 QGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                   1628
1833
68
1786
1804
2292
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID-1773;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN H37RV
                                                                                                                                                                                                                                                                                                                                                                                                      MURB_MYCTU
                                                                                                                                       ACT_SITE
SEQUENCE
                                                                                                                       ACT_SITE
                                                                                                                                                                                                                                                                                                                                                                                                                    011148;
                                                                                       CHAIN
   CHAIN
                                     CHAIN
                                                       CHAIN
                                                                     CHAIN
                                                                                                       LIPID
                                                                                                                                                                                                                                                                                                                                                                                  MURB_MYCTU
                                                                                                                                                                                                                                                                                                               g
   FT FT FT FT SO
                                                                                                                                                                                                                                                                               ò
```

```
Alba H., Baba T., Fujita K., Hayashi K., Honjo A., Horluchi T., Ikemoto K., Inada T., Isono K., Isono S., Itoh T., Kanai K., Kasai H., Kashimoto K., Kim S., Kimura S., Kitagawa M., Kitakawa M., Makino K., Masuda S., Miki T., Mizobuchi K., Mori H., Motomura K., Nakamura Y., Nashinoto H., Mishio Y., Oshima T., Salito N., Sampel G., Seki Y., Tagami H., Takemoto K., Wada C., Yamamoto Y., Yano M.;
Submitted (JAN-1997) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE-91294165; PubMed-1906060;
Kitagawa M., Wada C., Yoshloka S., Yura T.;
"Expression of ClpB, an analog of the ATP-dependent protease
regulatory subunit in Escherichia coli, is controlled by a heat shock
                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
STRÄNFALZ / MG165;
STRAINS-19742617; PubMed=9278503;
Blattner F.R., Plunkett G. III, Bloch C.A., Perna N.T., Burland V.,
Riley M., Collado-Vides J., Glasner J.D., Rode C.K., Mayhew G.F.,
Riley M., Collado-Vides J., Glasner H.A., Goeden M.A., Rose D.J.,
Mau B., Shao Y.,
                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-90239044; PubMed-2185473;
Gottesman S., Squires C., Pichersky E., Carrington M., Hobbs M., Mattick J.S., Dalrymple B., Kuramitsu H., Shiroza T., Foster T., Clark W.P., Ross B., Squires C.L., Maurili M.R.;
"Conservation of the regulatory subunit for the Clp ATP-dependent protease in prokaryotes and eukaryotes.";
Proc. Natl. Acad. Sci. U.S.A. 87:3513-3517(1990).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 753-857 FROM N.A.
MEDILNE-82247208; PubMed-6285294;
Shen W.-F., Squires C.L.;
"Nucleotide sequence of the rrnG ribosomal RNA promoter region of
                                                                                                                                                                                                                                                                                                                               Bacteria; Proteobacteria; gamma subdivision; Enterobacterlaceae;
                                 7;
 Length 369;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      "The complete genome sequence of Escherichia coli K-12."; Science 277:1453-1474(1997).
                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ogura T., Tomoyasu T.; Submitted (FEB-1996) to the EMBL/GenBank/DDBJ databases.
                                   ..
 DB 1;
                                                                                                                                                                                                                       21-JUL-1986 (Rel. 01, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
CLPB PROTEIN (HEAT SHOCK PROTEIN F84.1).
                 3.8;
                                                                                                                                                                                         857 AA
            36.0%; Preu. ...
 Score 45.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nucleic Acids Res. 10:3303-3313(1982)
                                                                                                                                                                                         PRT;
                                                                                            262 PVVTQDVYERLAGDAATRKDGPVPH 286
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       sigma factor (sigma 32).";
J. Bacteriol. 173:4247-4253(1991).
                                                                   1 PALVQGILERVV-----DGPTPH 18
 47.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE OF 1-593 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 1-31 FROM N.A.
STRAINHK12 / W3110;
                                 9; Conservative
                                                                                                                                                                                         STANDARD;
                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                             Escherichia coli
                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=562;
                                                                                                                                                                                                                                                                                              CLPB OR HTPM.
                                                                                                                                                                                                                                                                                                                                               Escherichia
                                                                                                                                                                                       CLPB_ECOLI
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-K12;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN K12;
Query Match
                                                                                                                                                                                                           P03815
                                                                                                                                                     RESULT 15
CLPB_ECOLI
                                 Matches
                                                                     δ
                                                                                                  g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001270; -.
Pfam; PFR0457; clpA=B; 1.
PRINTS; PR00300; CLPPROTEASEA.
PROSITE; PS00870; CLPAB=1; 1.
PROSITE; PS00871; CLPAB=2; 1.
Chaperone; AFP-binding; Repeat; Heat shock; Alternative initiation.
CHAIN 1857
                                                                                                                                   0;
                                     Pontis E., Sun X.Y., Joernvall H., Krook M., Reichard P., "ClpB proteins copurify with the anaerobic Escherichia coli
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           47.4%; Score 45; DB 1; Length 857; 37.5%; Pred. No. 11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     KL -> NV (IN REF. 1).
L -> V (IN REF. 1).
FD38CD96B2F7C32A CRC64;
                                                                                Biochem. Biophys. Res. Commun. 180:1222-1226(1991)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CLPB PROTEIN.
CLPB PROTEIN 3.
FOR CLPB PROTEIN 3.
                                                                                                                                                                                                                      -! - SIMILARITY: BELONGS TO THE CLPA/CLPB FAMILY.
             SEQUENCE OF 1-14; 150-157; 355-364 AND 452-460.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               I.
II.
ATP (POTENTIAL).
ATP (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                            IDENTIFICATION AS A HEAT SHOCK PROTEIN.
                          MEDLINE-92062147; PubMed-1953774;
                                                                                                                          MEDLINE=91294166; PubMed=2066329;
                                                                                                                                                                                                                                                                                                                                                                        EMBL; AE000345; AAC75641.1; EMBL; D90897; BAA16476.1; EMBL; X57620; CAA40846.1; EMBL; V00350; CAA40846.1; EMBL; V00350; CAA23639.1; PIR; D35905; D35905. PIR; S18736; S18736. SWISS-ZDPAGE; P03815; COLI. ECOZDBASE; E072.0; GTH EDITION. ECOZDBASE; E084.1; GTH EDITION. ECOZDBASE; E084.1; GTH EDITION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MM.
                                                                                                                                                                                                                                                                                                                                                                  EMBL; M29364; AAA24422.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  95585
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 37.5
Matches 6; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  122
857 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NP_BIND
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  INIT_MET
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
DOMAIN
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE
```

Search completed: September 10, 2001, 14:09:53 Job time: 562 sec

a

ò

2 ALVOGILERVVDGPTP 17

This Page Biank (uspto)

```
version 4.5
- 2000 Compugen Ltd.
    GenCore
Copyright (c) 1993
```

OM protein - protein search, using sw model

; Search time 42.28 Seconds (without alignments) 32.430 Million cell updates/sec September 10, 2001, 14:01:14 Run on:

1 PALVQGILERVVDGPTPH 18 US-08-833-506C-30 95 Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

219241 Total number of hits satisfying chosen parameters:

219241 seqs, 76174552 residues

Searched:

length: 0 length: 2000000000 sed Minimum DB Maximum DB

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries pirl:* pir2:* pir3:* PIR_68:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

		æ			SUMMARIES	
Result No.	Score	Query	Length	DB	ID	Description
-	95	100.0		7	A49676	nitric-oxide synth
7	79	3		7	A43271	nitric-oxide synth
æ	59	62.1	1147	П	S47647	nitric-oxide synth
4	59	62.1		1	538253	
2	59	62.1	1147	-	153165	nitric-oxide synth
9	29	62.1	1147	7	JC5027	nitric-oxide synth
7	52	•	1147	П	156575	
8	. 55	7	1147	7	JC5028	nitric-oxide synth
6	52	7		~	JC5029 ·	nitric-oxide synth
10	55	57.9		~	S65440	nitric-oxide synth
11	49	Ή.	1217	7	F69823	probable phosphoes
12	48	•		ч	A47501	nitric-oxide synth
13	47	49.5			E84562	probable Tub famil
14	47	49.5			E86694	ATP-dependent prot
15	47	49.5	842		T34902	
16	47	49.5	1205	7	A38943	nitric-oxide synth
17	46	48.4		~	D75500	ATP-dependent Clp
18	46	48.4	758	7	B83319	ATP-binding protei
19	46	48.4		7	H72258	endopeptidase Clp,
20	46	48.4		-	F64098	endopeptidase Clp
21	46	48.4	859	ď	F81863	protein
22	46	48.4		~	F81078	clpB protein NMB14
23	46	48.4		7	D82814	ATP-dependent Clp
24	46	48.4	~	-	GNNYE	genome polyprotein
25	46	48.4	~	-	GNNYED	
26	46	48.4	2292	Н	GNNYEB	
27	46	48.4	2292	7	S35961	
28	4	48.4	2292	~	S55401	capsid polyprotein
29	45.5	47.9	369	7	E70743	_

ATP-dependent prot	ClpB protein PA454	endopeptidase Clp	heat shock protein	D-3-phosphoglycera	heat shock protein	probable two-compo	conserved hypothet	probable secreted	sarcosine oxidase,	probable hexosyltr	hypothetical ABC t	hypothetical prote	cytoskeletal prote	endopeptidase Clp,	probable endopepti
B86705	D83077	D35905	E85905	A70464	F96771	B83055	E83102	T36841	F75144	A69989	C65129	н85999	S24609	H72404	C70834
7	7	٦	~	7	7	~	7	ď	~	1	~	~	7	7	7
816	854	857	861	533	911	983	80	322	379	407	637	637	651	820	848
47.4	47.4	47.4	47.4	46.3	46.3	46.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3	45.3
45	45	45	45	44	44	44	43	43	43	43	43	43	43	43	43
30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

```
C;Species: Homo sapiens (man)
C;Species: Homo sapiens (man)
C;Date: 16 Feb-1996 #text_change 20-Jun-2000
C;Accession: A49676; JX0345; G01947; I38933; S47566; A47475
R;Charles, I.G.; Palmer, R.M.; Hickery, M.S.; Bayliss, M.T.; Chubb, A.P.; Hall, V.S.; Proc. Natl. Acad. Sci. U.S.A. 90, 11419-11423, 1993
A;Titles.*Cloning, characterization, and expression of a cDNA encoding an inducible ni A;Reference number: A49676; MUID:94068614
                                                 nitric-oxide synthase (EC 1.14.13.39), inducible - human
A49676
```

A; Molecule type: mRNÅ A; Residues: 1-675, 1', 670-932, G', 934-965, 'A', 967-1153 <RE2> A; Cross-references: EMBL: U20141; NID: 9687660; PIDN: AAB60366.1; PID: 9687681 R; Maier, R.; Bilbe, G.; Rediske, J.; Lotz, M. Biochin. Biophys: Acta 1208, 145-150, 1994 A; Tille: Inducible nitric oxide synthase from human articular chondrocytes: cDNA clon A; Reference number: \$47566; MUID: 94368816

A:Status: preliminary; nucleic acid sequence not shown A:Molecule type: mRNA A:Residues: 1-22, G', 24-153, 'L',155-176, 'V',178-799,'A', 801-912, 'P', 914-1153 <MAI> A;Cross-references: EMBL:U05810; NID:9452487; PIDN:AAA56666.1; PID:9452488 F;Geller, D.A.; Lowenstein, C.J.; Shapiro, R.A.; Nussler, A.K.; Di Silvio, M.; Wang, Proc. Natl. Acad. Sci. U.S.A. 90, 3491-3495, 1993

Wed

```
A; Reference number: A46186; MUID:92357701
A; Accession: A46186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62.18;
81.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                83.2%;
94.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 ALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity 94.1
Matches 16; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 ALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Best Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         D
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Additional and the contractions of the contraction of an inducible nitric oxide synthase (EC 1.14.13.39), calmodulin-independent - mouse cipecies: Mus musculus (house mouse)
C; Species: Mus musculus (house mouse)
C; Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 03-Mar-2000
C; Accession: Additional Addi
A;Title: Molecular cloning and expression of inducible nitric oxide synthase from human A;Reference number: A47475; MuID:93234523
A;Accession: A47475
A;Accession: A47476
A;Accession: A47476
A;Accidention: A;Accidenti
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%; Score 95; DB 2; 100.0%; Pred. No. 2.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      염
```

```
A.Gene: NOS
C.Function:
Description: catalyzes the oxidation of an L-arginine guanidino nitrogen and of NAD
C.Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein re
C.Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; me
F;533-1121/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;535-671/Domain: flavodoxin homology <FLX>
F;194/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A; Residues: 1-71, Y',73-347,'PV',350-678,'VP',681-720,'L',722-739,'L',741-843,'G',845
A; Residues: 1-71,'Y',73-347,'PV',350-678,'VP',681-720,'L',722-739,'L',741-843,'G',845
A; Cross-references: DDBJ:D14051; NID:9286261
A; Experimental source: vascular smooth muscle
C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein re
C; Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; me
F; 536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F; 538-674/Domain: flavodoxin homology <FEX>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C,Accession: S47647; JC1472
R;Geng, Y.; Almqvist, M.; Hansson, G.K.
Biochim. Blophys. Acta 1218, 421-424, 1994
A;Title: CDNA cloning and expression of inducible nitric oxide synthase from rat vasc A;Reference number: S47647; MUID:94325351
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-1147 <GENN
A; Cross-references: EMBL: X76881; NID:g439283; PIDN:CAA54208.1; PID:g439284
A; Cross-references: EMBL: X76881; NID:g439283; PIDN:CAA54208.1; PID:g439284
B; Nunokawa, Y:; Ishida, N:; Tanaka, S.
Biochem. Biophys. Res. Commun. 191, 89-94, 1993
A; Title: Cloning of inducible nitric oxide synthase in rat vascular smooth muscle A; Reference number: JC1472; MUID:93191721
A; Reference number: JC1472; MUID:93191721
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     $38253
nitric-oxide synthase (EC 1.14.13.39) - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 16-Jun-2000
C;Accession: $38253; JN0457
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C;Species: Rattus norvegicus (Norway rat)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 16-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ;;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 1144;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 1147;
A;Status: preliminary; not compared with conceptual translation A;Molecule type: mRNA A;Rolecule type: mRNA A;Rosacules: 1-190, 'V',192-765, 'P',767-843,'G', 845-1144 <LOW>A;Cross-references: GB:M92649; NID:9200109 A;Experimental source: BALB/C, RAW 264.7 cells, macrophage A;Note: sequence extracted from NCBI backbone (NCBIP:113541) C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 79; DB 1; Pred. No. 9.3e-05; 0; Mismatches 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 59; DB 1;
Pred. No. 0.2;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nitric-oxide synthase (EC 1.14.13.39) - rat
```

ö

 ce_1

ö

S.; Niwa

```
C;Accession: 156575
R;Galea, E.; Reis, D.J.; Feinstein, D.L.
J. Neurosci. Res. 37, 406-414, 1994
A;Title: Cloning and expression of inducible nitric oxide synthase from rat astrocyte
A;Reference number: 156575; MUID:94231594
                                                                                nitric-oxide synthase (EC 1.14.13.39) K - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 21-Jan-1997 #sequence_revision 21-Jan-1997 #text_change 20-Jun-2000
C;Accession: JC5027
R;Tsutsumishita, Y.; Kawai, Y.; Takahara, H.; Onda, T.; Miyoshi, J.; Futaki, S.; Ni
Biol. Pharm. Bull. 19, 1374-1376, 1996
A;Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, A;Reference number: JC5027; MUID:97070590
A;Reference number: JC5027; MUID:97070590
A;Reference number: JC5027; MUID:97070590
A;Reference number: JC5027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A;Status: translated from GB/EMBL/DDBJ
A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-1147 - RESS
A;Molecule type: mRNA
A;Residues: 1-1147 - RESS
C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein: C;Reywords: calmodulin binding; chromoprotein; RAD; flavoprotein; FMN; heme; iron; F;538-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;538-674/Domain: flavodoxin homology <FEX>
F;538-674/Domain: flavodoxin homology <FEX>
F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                JC5028
nitric-oxide synthase (EC 1.14.13.39) L - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C;Accession: JC5028
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     C;Species: Rattus norvegicus (Norway rat)
C;Date: 05-May-2000 #sequence_revision 05-May-2000 #text_change 05-May-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ó;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 55; DB 1; Length 1147;
Pred. No. 0.91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           DB 2; Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      nitric-oxide synthase (EC 1.14.13.39) [similarity] - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 59; DB;
Pred. No. 0.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      62.1%;
81.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              57.9%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 779 ALVQGILERVVDCSSP 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 ALVOGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        780 LVQGILERVVDCSSP 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3 LVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best_Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best_Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Accession: 156575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           δ
                                                                                                                                                  A. Accession: S38233
A. Molecule type: mRNA
A. Rocession: S38253
A. Molecule type: mRNA
A. Rocession: S38253
A. Molecule type: mRNA
A. Rocession: S38253
A. Molecule type: mRNA
A. First Berger Jr. H.; Sherman, P.A.; Lapetina, E.G.
B. Cochen. Blophys. Res. Commun. 191, 767-774, 193
A. Title: Hepatocytes and macrophages express an identical cytokine inducible nitric oxid
A. Rocession: JN0457; MUID: 93221515
A. Rocession: JN0457
A. Status: nucleic acid sequence not shown
A. Molecule type: mRNA
A. Residues: 1-41, SS', 44-103, 105-190, 'Q', 192-213,'R', 215-247,'T', 249-263,'I', 265-373,'IE
A. Rocession: JN0457
A. Residues: 1-41, SS', 44-103, 105-190, 'Q', 192-213,'R', 215-247,'T', 249-263,'I', 265-373,'IE
A. Rocession: JN0457
A. Residues: 1-41, SS', 44-103, 105-190, 'Q', 192-213,'R', 215-247,'T', 249-263,'I', 265-373,'IE
A. Rocession: JN0457

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nitric-oxide synthase (EC 1.14.13.39) [similarity] - rat
C;Species: Rattus norvegicus (Norway rat)
C;Species: Rattus norvegicus (Norway rat)
C;Species: 153465
E;Karlsen, A.E.; Andersen, H.U.; Vissing, H.; Larsen, P.M.; Fey, S.J.; Cuartero, B.G.; R;Karlsen, A.E.; Andersen, H.U.; Vissing, H.; Larsen, P.M.; Fey, S.J.; Cuartero, B.G.; R;Tile: Cloning and expression of cytokine-inducible nitric oxide synthase cDNA from rath A;Reference number: 153165; MUID:95309542
A;Tile: Cloning and expression of cytokine-inducible nitric oxide synthase cDNA from rath A;Reference number: 153165
A;Accession: 153165
A;Accession: 153165
A;Reference number: BRNBL/DDBJ
A;Molecule type: MRNA
A;Residues: 1-1147 <RES>
A;Cross-references: EMEL:U26686; NID:9886072; PIDN:AAA85861.1; PID:9886073
C;Genetics:
A;Genetics:
             H.; Suzuki, H.; Nagasaki, K.; Kawasaki, H.;
R;Adachi, H.; Iida, S.; Oguchi, S.; Ohshima, H.; Suzuki, H.; Nagasaki, K.; Kawasaki, H. Eur. J. Biochem. 217, 37-43, 1993
A;Title: Molecular cloning of a cDNA encoding an inducible calmodulin-dependent nitric-A;Reference number: S38253; MUID:94039059
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 59; DB 1; Length 1147; Pred. No. 0.2; 1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 59; DB 1; Length 1147; Pred. No. 0.2; 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Ouery Match 62.1%;
Best Local Similarity 81.2%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            62.1%;
81.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Ouery Match
Best Local Similarity 81.2
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 779 ALVQGILERVVDCSSP 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             779 ALVOGILERVVDCSSP 794
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 ALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 ALVQGILERVVDGPTP 17
```

S

g

ô

ö

re

ö

g

ð

Ë

chromoprotein; FAD; flavoprotein; FMN; heme; iron;

```
C,Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FP 506-535/Region: calmodulin binding F;536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    779 ALVQGILERVVD 790
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 ALVQGILERVVD 13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Species: Rattus norvegicus (Norway rat)
C; Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C; Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C; Accession: JC5029
R; Tsutsumishita, Y.; Kawai, Y.; Takahara, H.; Onda, T.; Miyoshi, J.; Futaki, S.; Niwa, M. A; Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, and u. A; Reference number: JC5027; MUID:97070590
A; Accession: JC5029
A; Accession: JC5029
A; Reference number: JC5027; MUID:97070590
A; Reference number: JC5027; MUID:97070590
A; Reference number: JC5027; MUID:97070590
A; Residues: J-1147 cTSU>
C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reduct C; Superfamily: nitric-oxide synthase; flavodoxin homology cFEE>
C; Superfamily: nitric-oxide synthase; flavodoxin homology cFEE>
F; 536-1124/Domain: flavodoxin homology cFLX>
F; 536-1124/Domain: flavodoxin homology cFLX>
F; 197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                           A;Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, and unaper Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, and unaper Sequence number: JC5027; MUID:97070590
A;Recession: JC5028
A;Recession: JC5028
A;Retus: nucleic acid sequence not shown
A;Residues: 1.1147 cTSU-
C;Comment: This protein synthesizes nitric oxide from L-arginine.
C;Comment: This protein synthase; flavodoxin homology; NADPH--ferrihemoprotein reduct C;Reywords: calmodulin binding; chromoprotein; FAD; flavodoxin heme; iron; metal F;536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;536-1124/Domain: NADPH--ferrihemoprotein reductase homology seeH>
F;536-1124/Domain: NaDPH--ferrihemoprotein reductase homology seeH>
F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT 10
56440

intric-oxide synthase (EC 1.14.13.39) - rat
C.Species: Rattus norvegicus (Norway rat)
C.Date: 28-Oct-1996 #sequence_revision 13-Mar-1997 #text_change 04-Mar-2000
C.Accession: S6540
R.Twashlna, M.; Hirata, Y.; Imai, T.; Sato, K.; Marumo, F.
Eur. J. Blochem. 237, 668-673, 1996
A;Title: Molecular cloning of endothalial, inducible nitric oxide synthase gene from rat
A;Reference number: S65440
A;Reference number: S65440
A;Status: not compared with conceptual translation
A;Welecule type: mRNA
A;Welecule type: mRNA
A;Residues: 1-1147 < IWA>
C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reductive interval i
                                                            .. Pharm. Buil. 19, 13/4-13/0, 1350
tle: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, and
R;Tsutsumishita, Y.; Kawai, Y.; Takahara, H.; Onda, T.; Miyoshi, J.; Futaki, S.; Niwa,
Biol. Pharm. Bull. 19, 1374–1376, 1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  57.9%; Score 55; DB 2; Length 1147;
80.0%; Pred. No. 0.91;
tive 1; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .;
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 55; DB 2;
Pred. No. 0.91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JC5029
nitric-oxide synthase (EC 1.14.13.39) U
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        57.9%;
80.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match 57.9°
Best Local Similarity 80.0°
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 LVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3 LVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ద
```

```
Probable phosphoesterase (EC 3.1.-.-) yhcR - Bacillus subtilis

N;Alternate names: 5'-nucleotidase homolog yhcR
C;Species: Bacillus subtilis
C;Species: Bacillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Garter, N.M.;
R;Kunst, F.; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Berr
C; Bron, S.; Brouilet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.;
A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Ferrari,
Nature 390, 249-256, 1997
A;Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Gal
iech, J.; Harwood, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.; Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Levine, A.; Liu, H.; Masuda, S.; Mau
Y, M.; Ogawa, K.; Ogiwara, A.; Oudega, B.; Park, S.H.; Parro, V.; Pohl, T.M.; Portete
N; Mathors: Cableich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Se
A; Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekiguchi, J.; Sekowska, A.; Se
A; Authors: Yoshikawa, H.F.; Zumatein, E.; Yoshikawa, H.; Danchin, A.; Tosato, V.; Vohiya
T.; Minters, Po.; Wipat, A.; Yamamoto, E.; Yoshikawa, H.; Danchin, A.;
A; Title: The complete genome sequence of the Gram-positive bacterium Bacillus subtili
A; Accession: F69823
A; Accession: F69803
A; Actures: Preliminary; nucleic acid sequence not shown; translation not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Residues: 1-1217 <KUN>
A;Cross-references: GB:299108; GB:AL009126; NID:92633055; PIDN:CAB12747.1; PID:e11829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Comment: This sequence has motifs characteristic of a variety of phosphoesterases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Superfamily: unassigned probable phosphoesterases; phosphoesterase core homology
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A47501
nitrito-oxide synthase (EC 1.14.13.39), endothelial - human
C:Species: Homo sapiens (man)
C:Spate: 02-Jun-1995 #sequence_revision 21-Jul-1995 #text_change 03-Mar-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
F;538-67/Domain: flavodoxin homology cFLX>
F;539-618/Region: biopterin binding
F;539-618/Region: biopterin binding
F;539-618/Region: FAN binding #status predicted
F;764-775/Region: FAD binding #status predicted
F;765-993/Region: FAD binding #status predicted
F;75-993/Region: NADPH binding #status predicted
F;1074-1087/Region: NADPH binding #status predicted
F;1074-1087/Region: NADPH binding #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1217;
                                                                                                                                                                                                                                                                                                                                                                                           Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           .
Keywords: hydrolase
:591-682/Domain: phosphoesterase core homology <PEC>
                                                                                                                                                                                                                                                                                                                                                                                              DB 2;
0.91;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 3
                                                                                                                                                                                                                                                                                                                                                                                                                      100.0%; Prec. ...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 49;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                  Score 55;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   51.6%;
64.3%;
                                                                                                                                                                                                                                                                                                                                                                                              57.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Experimental source: strain 168
                                                                                                                                                                                                                                                                                                                                                                                              Ouery Match 57.9
Best Local Similarity 100.
Matches 12; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           :||::||||| | |
379 EGIVDRAVDGDTIH 392
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   5 QGILERVVDGPTPH 18
```

Ŋ

ö

Gaps

ö

```
probable Tub family protein [imported] - Arabidopsis thaliana C.Species: Arabidopsis thaliana (mouse-ear cress)
C.Species: Arabidopsis thaliana (mouse-ear cress)
C.Species: 02-Feb-2001 #sequence_revision 02-Feb-2001 #text_change 02-Feb-2001
C.Accession: E84562
R.Lin, X.; Kaul, S.; Rounsley, S.D.; Shea, T.P.; Benito, M.I.; Town, C.D.; Fujil, C.Y M.; Koo, H.; Moffat, K.S.; Cronin, L.A.; Shen, M.; VanAken, S.E.; Umayam, L.; Tallon, euss, D.; Nierman, W.C.; White, O.; Eisen, J.A.; Salzberg, S.L.; Fraser, C.M.; Venter Nature 402, 761-768, 1999
                 F;491-509/Region: calmodulin binding #status predicted
F;520-1159/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;520-703/Domain: lavodoxin homology <FEX>
F;520-703/Domain: flavodoxin homology <FEX>
F;548-680/Region: FMN binding #status predicted
F;548-680/Region: FAD-pyrophosphate binding #status predicted
F;791-804/Region: RAD-pyrophosphate binding #status predicted
F;100-1028/Region: NADP-adenine binding #status predicted
F;100-1124/Region: NADP-adenine binding #status predicted
F;3/Modified site: myristylated amino end (Gly) (in mature form) #status predicted
F;3/Modified site: aspartic acid (Asn) #status predicted
F;3/Modified site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nature 402, 761-768, 1999
A;Title: Sequence and analysis of chromosome 2 of the plant Arabidopsis thaliana. A;Reference number: A84420; MUID:20083487
A;Accession: E84562
A;Status: preliminary
A;Molecule type: DNA
A;Residues: 1-386 <STO>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A;Molecule type: DNA_
A;Residues: 1-748 <STO>
A;Cross-references: GB:AE005176; NID:912723443; PIDN:AAK04655.1; GSPDB:GN00146
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                O.; Malarme, K.; Weissenbach,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Cross-references: GB: AE002093; NID: 94309738; PIDN: AAD15508.1; GSPDB: GN00139
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ATP-dependent proteinase ATP-binding subunit [imported] - Lactococcus lactis C; Species: Lactococcus lactis subsp. lactis C; Date: 23-Mar-2001 #sequence_revision 23-Mar-2001 #text_change 23-Mar-2001 C; Accession: E86694 R; Bolotin, A.; Wincker, P.; Mauger, S.; Jaillon, O.; Malarme, K.; Weissenbach Genome Res. in press, 2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Title: The complete genome sequence of the lactic acid bacterium. A;Reference number: A86625 A;Accession: E86694
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1203;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 48; DB 1;
Pred. No. 14;
2; Mismatches (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. 5.6; 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 47;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Experimental source: strain IL1403
C;Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         50.5%;
52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         52.98;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1::|||| | | |:|
254 PSVVQGIEEEVSSSPSP 270
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            807 PGLVEALLSRVEDPPAP 823
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 PALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 PALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Status: preliminary
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C; Genetics:
A; Gene: At2g18280
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Map position:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Gene: clpE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                               A; Molecule type: DNA
B; Molecule type: MID:9348235; GB:L10700; NID:9348237; GB:L10699; NID:9348225; GB:L10700; NID:9348237; GB:L10699; NID:9348235; GB:L10700; NID:9348237; GB:L10699; NID:9348235; GB:L10707; NID:9348233; GB:L10700; NID:9348237; GB:L10701; NID:9348232; GB:L10707; NID:9348233; GB:L10707; NID:9348233; GB:L10708; NID:9348234
B; Molecule type: Molecule cloning and characterization of human endothelial nitric oxide syntha
A; Accession: S24052; MUID:92354731
A; Accession: S24052
A; Molecule type: mRNA
A; Residues: 1-1203 <AAAR2>
A; Cross-reference number: A38948
A; Molecule type: mRNA
A; Residues: 1-1203 <AAAN3
A; Residues: 1-1203 <AAN3
A; Residues: 1-1203 <AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A; Cross-references: GB:M93718; NID:g189211
A; Note: this sequence has been revised in reference A49813
A; Cross-references: GB:M93718; NID:g189211
A; Note: this sequence has been revised in reference A49813
A; Cross-references: GB:M93718; NID:g189211
A; Note: this sequence has been revised in reference A; Reference Biochen: Biochen: Biochen: Biochen: Biochen: Biochen: Biochen: A; Title: GB: Burlification and characterization of the constitutive nitric oxide synthase from A; Reference number: S45691; MUID:94263196
A; Reference number: S45691; MUID:94263196
A; Residues: 'XX', 169-175; 531-536, 'X', 538-540; 835, 'X', 837-843, 'X', 845; 876-877, 'X', 879-881
A; Residues: 'XX', 169-175; 531-536, 'X', 538-540; 835, 'X', 837-843, 'X', 845; 876-877, 'X', 879-881
A; Reperimental source: placenta
B; Nadaud, S.; Bonnardedux, A.; Lathrop, M.; Soubrier, F.
B; Nadaud, S.; Bonnardedux, A.; Lathrop, M.; Soubrier, F.
B; Nadaud, S.; Bonnardedux, A.; Lathrop, M.; Soubrier, F.
B; Nadaud, S.; Bonnardedux, A; Lathrop, M.; Soubrier, F.
B; Nadaud, S.; Bonnardedux, A; Lathrop, M.; Soubrier, F.
B; Nadaud, S.; Bonnardedux, A; Lathrop, M.; Soubrier, F.
B; Nadaud, S.; Bonnardedux, A; Lathrop, M.; Soubrier, F.
B; Nadaud, S.; Bonnardeux, No. 194, 101710
A; Accession: 137361; MUID:94161710
A; Accession: 137361; MUID:94161710
A; Residues: 1-297, 'D', 299-566, 'W', 568-1193, 'E', 1195-1203 <NAD>
A; Cross-references: EMBL:X76303; NID:9461307; PIDN:CAA53950.1; PID:9825522
A; Cross-references: EMBL:X76303; NID:9461307; PIDN:CAA53950.1; PID:9825522
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Description: catalyzes the oxidation of an L-arginine guanidino nitrogen and of NADPH C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH-ferrihemoprotein reduc C;Reywords: blocked amino end; calmodulin binding; chromoprotein; FAD; flavoprotein; FMN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               fа
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Map position: 7q36-7q36
A;Introns: 53/2; 90/3; 140/2; 194/3; 225/2; 272/3; 319/2; 377/3; 411/3; 476/3; 501/2; 54
C;Function:
C;Accession: A47501; S24052; A38948; A49813; A42867; S45691; I37361
R;Marsden, P.A.; Heng, H.H.Q.; Scherer, S.W.; Stewart, R.J.; Hall, A.V.; Shi, X.M.; Tsui
J. Biol. Chem. 268, 17478-17488, 1993
A;Title: Structure and chromosomal localization of the human constitutive endothelial ni
A;Reference number: A47501; MUID:9335239
A;Accession: A47501
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A;Molecule type: mRNA
A;Residues: 1-82,'S',B4-179,'F',181-566,'W',568-647,'Q',649-854,'V',B56-1008,'G',1010-11
PSQ','QRYPRAXCHPLPVS' <JAN3>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Accession: A49813
A; Molecule type: mRNA
B; Molecule type: mRNA
A; Molecule type: mRNA
A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A;Gene: GDB:NOS3
A;Cross-references: GDB:209976; OMIM:163729
```

딥 ٦ .

subsp.

ö

Gaps

```
clyptotednase ATP-binding chain - Streptomyces coelicolor
C; Species: T44902
R; Oliver, K.; Harris, D.; Parkhill, J.; Barrell, B.G.; Rajandream, M.A.
A; Caccession: T34902
A; Reference number: 221561
A; Accession: T34902
A; Status: preliminary; translated from GB/EMBL/DDBJ
B; Status: preliminary; translated fro
                                                                                                                                0
                                                                                                                                Gaps
                                                                                                                          ;
           Score 47; DB 2; Length 748;
Pred. No. 12;
6; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
49.5%; Score 47; DB 2; Length 842;
Best Local Similarity 43.8%; Pred. No. 14;
Matches 7; Conservative 5; Mismatches 4; Indels
           49.5%;
Query Match
Best Local Similarity 43.8'
Matches 7; Conservative
                                                                                                                                                                                                                                                                                      160 AVVEGLAQKIVDGDVP 175
                                                                                                                                                                                                                         2 ALVQGILERVVDGPTP 17
                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                    ò
```

Search completed: September 10, 2001, 14:01:15 Job time: 214 sec

1:1:1: :1 | 1 | 243 AIVEGLAQRITDGDVP 258

g

ô

2 ALVQGILERVVDGPTP 17

ö

Gaps

```
% Search time 67.08 Seconds
(without alignments)
16.268 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Sings | Acgordata | Geneseq | Jans | Accordate | Jans | Accodd | Accordate | Jans | Accordate | Jans | Accordate | Jans | Acc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            412676
4.5
Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            412676 seqs, 60623988 residues
                                                                                                                                                                                                                                               September 10, 2001, 14:00:24
        GenCore version
Copyright (c) 1993 - 2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                 US-08-833-506C-30
95
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    110...
1111...
1112...
114...
114...
114...
114...
114...
114...
114...
114...
114...
114...
114...
114...
114...
114...
114...
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing:
                                                                                                                                                                                                                                                                                                                                                                                                                                                 Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                                               Run on:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

					COLFIGURATION	
		dР				
Result		Query	Query			
No.	Score	Match	Length	DB	QI	Description
7	95	100.0	18	19	AAW81231	Human iNOS peptide
7	95	100.0	18	19	AAW81179	Human iNOS (781-79
3	95	100.0	18	19	AAW81271	Human iNOS peptide
4	95	100.0	18	19	AAW81276	Human iNOS peptide
S	95	100.0	18	19	AAW81205	Human iNOS peptide
9	95	100.0	18	19	AAW81206	Human iNOS peptide
7	95	100.0	18	19	AAW81209	Human iNOS peptide
80	95	100.0	1146	20	AAW96322	Inducible nitric o
თ	95	100.0	1153	15	AAR55764	Sequence encoded b
10	95	100.0	1153	15	AAR63206	Nitric-oxide-synth
11	92	100.0	1153	17	AAR88464	Hepatocyte inducib

Human inducible ni Amino acid sequenc Human inducible ni Human inOS peptide Mouse inOS (776-79 Inducible nitric o Human inOS peptide Human inOS peptide Human inOS peptide Human inOS peptide Rat inducible nitr Human inOS peptide Human inOS peptide	inos inos endot endot acid nitri helial e endo s endo s inos inos secre secre
AAW36113 AAB31724 AAB66724 AAW81233 AAW81296 AAW81296 AAW81237 AAW81237 AAW81237 AAW81301 AAW81301 AAW81301 AAW81301 AAW81301 AAW81301 AAW81298 AAW81129	AAW81322 AAR41668 AAR41668 AAR37315 AAR37363 AAR39330 AAR93930 AAR91239 AAW81239 AAW81239 AAW81239 AAR330053 AAR33429
10000000000000000000000000000000000000	11222222222222222222222222222222222222
1153 1153 1153 1153 1153 1153 1154 1174 1172 1174 1174 1174 1174 1174 117	1203 1203 1203 1203 1205 1205 857 857 906 45
1000 1000 1000 1000 1000 1000 1000 100	UUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUUU
77788888888888888888888888888888888888	44444444444444444444444444444444444444
2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	, , , , , , , , , , , , , , , , , , ,

ALIGNMENTS

deptide fragment PS-5166 AAW81231 standard; peptide; 18 (first entry) 30-APR-1999 HUMAN INOS AAW81231

¥.

RESULT

Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.

Homo sapiens

18 /note= "His residue amidated" Location/Qualifiers 97US-6667777 97WO-US06500 Key Modified-site 11-APR-1997; 07-APR-1997; WO9845710-A1 15-0CT-1998

Ξ. (WEBB/) WEBBER Webber R;

WPI; 1998-594495/50.

2

```
.
0
                                                                                                                   This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriaais, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (inOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Inducible nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                    Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                    Score 95; DB 19;
Pred. No. 7.1e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human INOS (781-798) peptide fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Disclosure; Page 20; 93pp; English.
                                                                                    Example 4; Page 36; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ş
                                                                                                                                                                                                                                                                                                                                                                                 100.0%; Sc
100.0%; Pr
Eive 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAW81179 standard; peptide; 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           97US-6667777.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                     Best_Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1998-594495/50
                                                                                                                                                                                                                                                                                                                                  18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15-0CT-1998
                                                                                                                                                                                                                                                                                                   .nvention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Webber R;
                                                                                                                                                                                                                                                                                                                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW81179;
                                                                                                                                                                                                                                                                                                                                                                                    Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
AAW81179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      8
```

```
ö
tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple scherosis. This sequence represents a peptide fragment from human iNOS which is used in the method
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                     ó;
                                                                                                                                                                     Length 18;
                                                                                                                                                                                                     Indels
                                                                                                                                                                  100.0%; Score 95; DB 19;
100.0%; Pred. No. 7.1e-10;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            /note- "His residue amidated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human iNOS peptide fragment PS-5166.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 13; Page 55; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                        AAW81271 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97US-6667777.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97WO-US06500
                                                                                                                                                                                                                                                         1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                          (first entry)
                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1998-594495/50.
                                                                                                                                                                                     Best_Local Similarity
Matches 18; Conser
                                                                                     of the invention.
                                                                                                                     Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              æ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (WEBB/) WEBBER
                                                                                                                     18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Key
Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-0CT-1998
                                                                                                                                                                                                                                                                                                                                                                                         AAW81271;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Invention
                                                                                                                     Sequence
                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                          AAW81271
 8888888888
                                                                                                                                                                                                                                        á
                                                                                                                                                                                                                                                                    g
```

AA;

18

Sequence

```
This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                         Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; Mab.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                 Human iNOS peptide fragment capable of binding Mab 2D2-B2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Human iNOS peptide fragment capable of binding Mab 5B3-E6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                100.0%; Score 95; DB 19;
100.0%; Pred. No. 7.1e-10;
iive 0; Mismatches 0;
                        AAW81205 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 3; Page 32; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW81206 standard; peptide; 18
                                                                                                                                                                                                                                                                                                                                                                                                                                 97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (first entry)
                                                                                                          30-APR-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                        Homo sapiens.
                                                                                                                                                                                                                                                                                                                                             WO9845710-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                 11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                       15-0CT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW81206;
                                                                  AAW81205;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Matches
AAW81205
ID AAW8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW81206
                                                                  Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                      ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or minics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                               Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       This invention describes an immunoassay method where a sample with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ó
                                                                                      .;
0
                                              Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%; Score 95; DB 19; 100.0%; Pred. No. 7.1e-10;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ..
0
                                            Score 95; DB 19;
Pred. No. 7.1e-10;
                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                             AAW81276 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Disclosure; Fig 1; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                          Query Match 100.0%; S
Best Local Similarity 100.0%; P
Matches 18; Conservative 0;
                                                                                                                                                                                                                                                                                                                                                                                                         Human iNOS peptide fragment #2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97US-6667777
                                                                                                                                                    1 palvqgilervvdgptph 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Conservative
```

WPI; 1998-594495/50.

œ

(WEBB/) WEBBER

Webber R;

11-APR-1997; 07-APR-1997;

15-0CT-1998

Homo sapiens. WO9845710-A1

30-APR-1999

AAW81276;

AAW81276

q

ŏ

Local Similarity es 18; Conserv

RESULT

g

ð

Query Match Best Loca Matches

18 AA;

Sequence

ö

Gaps

ö

Indels

Length 18;

```
This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Protection of mammalian cells against immunotoxicity or lipotoxicity - used for treating, e.g. diabetes, obesity, wasting syndromes,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Manganese containing superoxide dismutase; MnSOD; IDDM; diabetes mellitus; treatment; therapy; nitric oxide; NO; beta cell; fatty acid; lipotoxic; cytotoxic; cytokine; osteoporosis; inflammatory disease; autoimmune disease; neurodegenerative disease.
                                                                                        Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human INOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Koyama K, Lee Y, Newgard CB;
Thigpen A, Unger RH;
                                                                                                                                                                                                                                                                                                                                                                                                               100.0%; Score 95; DB 19;
100.0%; Pred. No. 7.1e-10;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW96322 standard; Protein; 1146 AA.
                                                                                                                                                     Example 3; Page 33; 93pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        98US-0055092.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98WO-US15781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 PALVOGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            28-JUN-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (BETA-) BETAGENE INC.
(TEXA ) UNIV TEXAS SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SA, Hohmeier H, Ko
a M, Shimabukurom,
                                                                                                                                                                                                                                                                                                                                                                                                                 Ouery Match 100.
Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WPI; 1999-153448/13.
                                                          WPI; 1998-594495/50
                                                                                                                                                                                                                                                                                                                                                                    18 AA;
   (WEBB/) WEBBER R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             N-PSDB; AAX08434
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    HOMO sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9906059-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-JUL-1998;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        03-MAR-1998;
30-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ohneda M,
                               Webber R;
                                                                                                                                                                                                                                                                                                                                         invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW96322;
                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAW96322
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT
   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                              This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; Mab.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                       Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Human 1NOS peptide fragment capable of binding Mab 22E3-2F5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 95; DB 19;
Pred. No. 7.1e-10;
Mismatches 0;
autoimmune disease; multiple sclerosis; Mab
                                                                                                                                                                                                                                                                                                                                      Example 3; Page 32; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW81209 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 100.08;
                                                                                                                      97WO-US06500
                                                                                                                                                   97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                            WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
                                                                                                                                                                                 (WEBB/) WEBBER R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18 AA;
                               Homo sapiens
                                                          WO9845710-A1
                                                                                                                                                   07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-APR-1997;
                                                                                                                      11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-APR-1999
                                                                                          15-OCT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-0CT-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Invention
                                                                                                                                                                                                               Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW81209;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAW81209
 ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        9
```

ö

Gaps

ö

Length 18; Indels

```
09-MAY-1995
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cell culture
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25-MAR-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  26-MAR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13-0CT-1994.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WO9423038-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR63206;
                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   10
                                                                                                                                                                                                                                                                                                                                                                                          781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR63206
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   88888888888
                                                                                                                                                                                                                                                                                                                                                                                        q
                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                    achieved by blocking free radical production or the accumulation of free radicals in that cell. Treatment of insulin dependent diabetes mellitus (IDDM) can be achieved by by blocking nitric oxide (NO) production in a pancreatic beta cell and by providing a composition comprising an agent that reduces levels of fatty acids in the cells and protects beta-cells of the subject against lipid-mediated cell ceath. Cells can also be protected against lipid-mediated cell ceath. Cells can also be protected against intric oxide mediated cells cytocoxicity by introducing into the cells an antioxidising agent. The methods can be used for protecting cells against immunotoxicity mediated by, e. g. ll-1 beta, ll-1 alpha, gamma IFN, TNF alpha, TL-2, ll-6, ll-2, ll-3, ll-5, ll-7, ll-9, ll-1, l
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAQ66914 is from human hepatocyte inducible nitric oxide synthase clone pHINOS from lambda Zap II cDNA library. The original source was induced human hepatocyte RNA. HINOS cDNA plasmid is pref.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence encoded by the cDNA clone for human hepatocyte inducible
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       cDNA clone encoding human inducible nitric oxide synthase - used to prevent the hypotensive shock seen with sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Score 95; DB 20; Length 1146; Pred. No. 8.3e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nitric oxide synthase; hepatocyte; hypotensive shock; therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     syndromes, short stature, osteoporosis, inflammatory s, autoimmune diseases, or neurodegenerative diseases
                                                                                                                     Inhibition of cytokine mediated immunotoxicity of cells can
     or
osteoporosis, inflammatory diseases, autoimmune diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Simmons RL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                      Disclosure; Page 247-251; 253pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Nussler AK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAR55764 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Fig 1; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            93WO-US11401
                         neurodegenerative diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Local Similarity 100. tes 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Geller DA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (UYPI-) UNIV PITTSBURGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1994-200273/24.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1146 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          N-PSDB; AAQ66914
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23-NOV-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25-NOV-1992;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9412645-A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   28-DEC-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Billiar TR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     09-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR55764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
AAR55764
```

ò

```
ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ô
transformed in E. coli SOLR (ATCC 69126). The inventors claim a clone with the cDNA sequence in AAQ66914 and a cDNA clone which encodes AAR55764. The cloning and expression of a human tissue nitric oxide synthase cDNA provides a source of the enzyme for therapeutic purposes, for example to prevent the hypotensive shock seen with sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nitric-oxide-synthase. cDNA was generated and used to construct a library in lambda ZAPII. This was screened with a 650 bp fragment of mouse inducible NO-synthase cDNA to identify the full-length clone PBSHSINOS. The insert was transferred to pSVL to give a vector capable of expressing NO-synthase in CHO cells under control of a
                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Human chondrocytes were incubated with interleukin-1-beta to induce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            for diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            tumor;
                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1153;
                                                                                                                                                                                                                                                                            Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nitric-oxide-synthase; NO-synthase; NOS; chondrocyte; interleukin-1-beta; pBSHSINOS; arthritis; hypertension; septic shock; inflammation; ischemia; dementia; obesity; agonist; antagonist; vector; CHO; Chinese hamster ovary;
                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                New human inducible nitric oxide synthase - useful identifying enzyme inhibitors and stimulators, and and treatment of e.g. viral infections or tumours
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ŝ
                                                                                                                                                                                                                                                                       Score 95; DB 15;
Pred. No. 8.4e-08;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  100.0%; Score 95; DB 15;
100.0%; Pred. No. 8.4e-08;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Moncada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Charles IG, Moncada SE, Palmer RMJ,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page 25-31; 42pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    heterologous constitutive promoter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR63206 standard; Protein; 1153
                                                                                                                                                                                                                                                                                                                              .
0
                                                                                                                                                                                                                                                                          100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        94WO-GB00621
                                                                                                                                                                                                                                                                                                                                                                                                             (WELL ) WELLCOME FOUND LTD.
                                                                                                                                                                                                                                                                                                                                                                               1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (first entry)
                                                                                                                                                                                                                                                               Query Match
Best Local Similarity 100.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nitric-oxide-synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1994-333198/41.
                                                                                                                                                                                             1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               N-PSDB; AAQ77700
```

```
(RAJF/) RAJFER J.
                                                                                                                                    N-PSDB; AAT98199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO200103728-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  09-JUL-1999;
Homo sapiens
                W09742965-A1
                                                 09-MAY-1997;
                                                                  10-MAY-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Homo sapiens
                                20-NOV-1997
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  18-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB31724;
                                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 13
                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB31724
ò
                                                                                                                                                                                                                                                                                                                                                                                                            g
                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                        An inducible nitric oxide syntase (iNOS - AAR88464) is the product of a CDNA clone (AAT10115) derived from human hepatocytes induced for iNOS blosynthesis. The iNOS can be obtd. by expression of the CDNA e.g. in mammalian host cells and is used in the development of selective inhibitors of NOS or to treat diseases affected by nitric oxide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Nitric oxide synthetase; NOS; iNOS; HPINOS; human; erectile dysfunction; impotence; gene therapy; corpora cavernosa;
                                                                                                                                                                                                                                                                                                Inducible nitric oxide synthase gene - useful in gene therapy to treat, e.g. vascular occlusive disease and cancer
                                                                                                                          Inducible nitric oxide synthase; iNOS; hepatocyte; gene therapy; vascular occlusive disease; cancer; infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                             Length 1153;
                                                                                                                                                                                                                                                        Tzeng E;
                                                                                                                                                                                                                                                                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                        Simmons RL,
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 95; DB 17;
Pred. No. 8.4e-08;
                                                                                                          Hepatocyte inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                             Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human inducible nitric oxide synthetase.
                                                                                                                                                                                                                                                                                                                        Disclosure; Page 54-58; 91pp; English.
                                                                                                                                                                                                                                                        Nussler AK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAW36113 standard; Protein; 1153 AA.
                                                        AAR88464 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                            100.0%;
100.0%;
                                                                                                                                                                                                      95WO-US07849.
                                                                                                                                                                                                                      940S-0265046
       781 palvqgilervvdgptph 798
PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 PALVQGILERVVDGPTPH 18
                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match 100.
Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                        Geller DA,
                                                                                                                                                                                                                                      (UYPI-) UNIV PITTSBURGH
                                                                                                                                                                                                                                                                        WPI; 1996-068641/07.
                                                                                                                                                                                                                                                                                                                                                                                                    1153 AA;
                                                                                                                                                                                                                                                                                N-PSDB; AAT10115
                                                                                                                                                     Homo sapiens
                                                                                                                                                                    WO9600006-A1
                                                                                                                                                                                                      20-JUN-1995;
                                                                                                                                                                                                                      24-JUN-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         11-MAY-1998
                                                                                         13-MAY-1996
                                                                                                                                                                                                                                                       Billiar TR,
                                                                                                                                                                                     04-JAN-1996
                                                                          AAR88464;
                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        AAW36113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           relaxant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW36113
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT
                                                         ò
              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

```
This protein comprises human penis inducible nitric oxide synthetase (HPINOS). Its amino acid sequence was deduced from a con Aribania cancel mean human penile smooth muscle cell mRNA. The invention is directed to a method of treating erectile dysfunction in a patient by providing an agent capable of treating erectile dysfunction, and introducing an effective amount of the agent into the penile tissue of the patient. Preferably, the agent into the penile tissue of the patient. Preferably, the agent induces cavernosal smooth muscle relaxation, and/or produces an increase in the level of NOS in tissue. Preferably, the NOS is NOS, and the agent is introduced into the corpora cavernosa of the penis. The agent is preferably an NOS inducer, an NOS protein such as HPINOS, a cDNA encoding an NOS such as HPINOS, or cDNA transformed penile cells, especially corpora cavernosa
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Amino acid sequence of a human inducible nitric oxide synthase (NOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gene therapy, angiogenesis; nucleic acid delivery; arteriosclerosis; nitric oxide synthase; NOS; endothelial dysfunction.
                                                                                                                                                                                                                                                                                                                                                                                                                Treatment of erectile dysfunction - by introducing an agent into penile tissue, particularly for inducing cavernosal smooth muscle relaxation or increasing NOS levels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 95; DB 19;
Pred. No. 8.4e-08;
; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB31724 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Claim 12; Page 38-41; 53pp; English
                                                                                                                                                                                                                                             Rajfer J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           100.0%;
100.0%;
                                                                                                                                        (GONZ/) GONZALEZ-CADAVID N F.
97WO-US07643
                                                                    96US-0017373
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-JUL-2000; 2000WO-NL00482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            99EP-0202263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 PALVOGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-APR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 100.
Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                             Gonzalez-Cadavid NF,
                                                                                                                                                                                                                                                                                                              WPI; 1998-008577/01.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1153 AA;
```

Wed Sep 12 12:14:55 2001

```
WPI; 1998-594495/50.
                                 1153 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       15
                                                                                                                                                                                                                                                                                                                                                        Modified-site
                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                   11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                         WO9845710-A1
                                                                                                                                                                                                                           30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                              15-0CT-1998.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   invention
                                                                                                                                                                                                       AAW81233;
                                  Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                              RESULT 1
                                                                                                                              qq
                                                                                                                                                                                                       22 X 23
                                                                                                           δ
                                                                                                                                                                                                                                                                                                      ..
                                                                                   Nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, used for isolated tissue perfusion treatment to enhance
                                                                                                                                               The specification describes a method for gene therapy for enhancing and inducting angiogenesis. The method uses a nucleic acid delivery vehicle, which comprises a nucleic acid encoding nitric oxide synthase (NOS). The delivery vehicle is used for the manufacture of a pharmaceutical composition for isolated tissue perfusion treatment. The method is useful for enhancing and/or inducing angiogenesis in patients with endothelial dysfunctions, in particular arteriosclerosis. The present sequence represents an inducible NOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Use of a nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, especially useful in gene therapy for enhancing and/or inducing angiogenesis and treating atherosclerosis \cdot
                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The present invention relates to use of a nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase (NOS) activity for the manufacture of a composition for essentially isolated tissue perfusion treatment to enhance and/or induce
                                                                                                                                                                                                                                                                                                     ;
0
                                                                                                                                                                                                                                                                                 Length 1153;
                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Nitric oxide synthase; NOS; angiogenesis; gene therapy.
                                                                                                                                                                                                                                                                               Score 95; DB 22;
Pred. No. 8.4e-08;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Examples; Page 14-18; 39pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                  AAB66724 standard; protein; 1153 AA
                                                                                                                              Disclosure; Fig 6; 37pp; English.
                                                                                                                                                                                                                                                                                                    .
0
                                                                                                                                                                                                                                                                               100.0%;
99US-0143101.
                                                                                                                                                                                                                                                                                                                                   781 palvqgilervvdgptph 798
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        99EP-0202263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              99EP-0202263
                                                                                                                                                                                                                                                                                                                         1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                          Vogels R, Verlinden SFF;
                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                         and induce angiogenesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Vogels R, Verlinden S;
                     (INTR-) INTROGENE BV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (INTR-) INTROGENE BV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-125729/14.
                                                              WPI; 2001-123142/13.
                                                                                                                                                                                                                                               1153 AA;
                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EP1067190-A1.
09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    10-JAN-2001.
                                                                                                                                                                                                                                                                                                                                                                                                                                            09-APR-2001
                                                                                                                                                                                                                                                Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                       AAB66724;
                                                                                                                                                                                                                                                                                                                                                                                       AAB66724
                                                                                                                                                                                                                                                                                                                                                                             RESULT
 q
                                                                                                                                                                                                                                                                                                                                                                                                                      ò
```

```
specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This invention describes an immunoassay method where a sample with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
angiogenesis. The nucleic acid delivery vehicle is particularly useful in gene therapy for the treatment of atherosclerosis.
                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                       Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Length 15;
                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  DB 19; L
2.3e-07;
                                                                                                                                                                                                    100.0%; Score 95; DB 22;
100.0%; Pred. No. 8.4e-08;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           /note= "His residue amidated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 80;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Human iNOS peptide fragment PS-5222
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW81233 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 4; Page 36; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  84.2%; S
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                   1 PALVQGILERVVDGPTPH 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                       Query Match 100.
Best Local Similarity 100.
Matches 18; Conservative
```

0; Gaps 0; Indels 0; Mismatches Matches 15; Conservative

0;

Qy

Search completed: September 10, 2001, 14:00:25 Job time: 169 sec

Searched:

Database

Result

Sequence:

Run on:

```
Q9XyU9 wuchereria
018479 meloidogyne
Q9nxj6 homo sapien
Q9hcc8 homo sapien
Q9rz18 deinococcus
Q9rx6 deinococcus
Q9rx8 arabidopsis
Q9x83 streptomyce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                          09p4el cunninghame
09pp6 drosophila
09na92 caenorhabdi
04663 corynabacte
09hg14 phanerochae
09hdg2 phanerochae
09hdg2 phanerochae
09hdg2 bhanerochae
                                                                                                                                                                                                                               Q9w1z6 drosophila
Q9sh73 arabidopsis
Q9uyq8 pyrococcus
                                                                                                                                                                                                09fp93 oryża sativ
060471 homo sapien
                                                                                        oryza sativ
                                                                                                                                                                                                            060471 homo sapien
Q9ubk8 homo sapien
                   drosophila
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                           INOS.
Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidee; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                   92dv60
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     94.8%; Score 92; DB 4; Length 1114; 94.4%; Pred. No. 4.2e-07; ive 0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C1F9624774435571 CRC64;
                                                                                                                                                                                                                                                                                                                                                   01-MAY-1999 (TrEMBLrel. 10, Created)
1-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-OCT-2000 (TrEMBLrel. 15, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                 PRT; 1114 AA
                                                                                                                                                                                                                                                                                 ALIGNMENTS
                                                                                      09LDW2
Q9KB53
Q9YCT1
                                                                                                                                                                                                Q9FP93
060471
                                                                                                                                                                    Q9HNX6
Q9LXS0
                 09VP28
09P4E1
09GPP6
09NA92
046063
                                                                                                                   Q9XYU9
018479
Q9NXJ6
Q9HCC8
Q9HCC8
                                                                             Q9HDG2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001433;
InterPro; IPR001709;
InterPro; IPR0031097;
Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00311; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        126748 MW;
                                                                                     10
                                                                                                                                                                             10
                                                                                                                                                                                                10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
Matches 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
NCBI_TaxID=9606;
094994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               970
                                                                                                                                                                                                                                                                                                             RESULT
094994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
ACCOCCOOR BET THE STANK ACCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ogwtk6 cavia porce Q60451 cricetulus Q915m8 homo sapien O15702 dictyostell Q0041 aspergillus O16550 caenorhabdi Q12181 saccharomyc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Q9jjy7 rattus norv
Q9n176 ovis aries
Q9tux8 canis famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9r0w4 rattus norv
Q9ttt6 oryctolagus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Q9qw28 rattus sp.
Q9pu92 cyprinus ca
Q09590 caenorhabdi
                                                                            (without alignments)
32.830 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             094994 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9nkv3 bombyx mori
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         097604 canis famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9n175 ovis aries
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                  September 10, 2001, 14:11:13; Search time 72.54 Seconds
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Description
                   Compugen Ltd
                                                                                                                                                                                                Total number of hits satisfying chosen parameters:
         GenCore version 4.5 Copyright (c) 1993 - 2000 Comp
                                                                                                                                                                             425026 segs, 132305027 residues
                                                                                                                                                                                                                                                Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Q9NKV3
Q9JJY7
Q9N176
Q9TUX8
Q9WTK6
Q60451
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9N175
Q9R0W4
Q9TTT6
Q9QW28
Q9PU92
                                                                                                                                                          Gapop 10.0 , Gapext 0.5
                                                                                                                            1 RMTLVFGSRRPDEDHIYO 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             094994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               015702
Q00141
016550
Q12181
                                                                                                                                                                                                                                                                                                                                                                                                             sp_unclassified:*
sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                         sp_invertebrate:*
sp_mammal:*
                                                                                                                                                                                                                                                                                                                                                                       sp_organelle:*
                                                                                                     US-08-833-506C-31
97
                                                                                                                                                                                                                    Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                     sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                          sp_plant:*
sp_rodent:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query
Match Length DB
                                                                                                                                                                                                                                                                                                                       sp_fungi:*
sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                                                                  sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                   sp_phage:*
                                                                                                                                                                                                                                                                                          SPTREMBL_16:*
                                                                                                                                                                                                                                                                                                                                                            sp_mhc:*
                                                                                                                                                BLOSUM62
                                                                                                                    Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Scoring table:
                                                                                                                                                                                                                                                                                          ..
```

```
SEQUENCE
                                                                                                                                                        Q9R0W4;
                                                                                                                                           Q9R0W4
                                                                                                                   g
                                                            õ
                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                            [1]
SEQUENCE FROM N.A.
TISSUE-AORTA;
MEDLINE-98431941; PubMed-9746458;
MEDLINE-98431941; PubMed-9746458;
Wang X., McGregor C.G.A., Miller V.M.;
"Induction and cDNA sequence of inductible nitric oxide synthase from canine aortic smooth muscle cells.";
Am. J. Physiol. 275:H1122-H1129(1998).
EMBL; AF077821; AAC78630.1;
                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ovis aries (Sheep).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoldea;
Bovidae; Caprinae; Ovis.
                               01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAY-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE.
Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutherla; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
Mershon J.L., Clark K.E.;
"Estrogen increases the expression of iNOS in the ovine coronary
                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                              Score 86; DB 6; Length 1154;
Pred. No. 4.6e-06;
2; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (JAN-2000) to the EMBL/GenBank/DDBJ databases.

REMBL, AF22342; AAF34710.1; -.

RINEPPO: IPR001094; -.

RINEPPO: IPR0011039; -.

RINEPPO: IPR001709; -.

RINEPPO: IPR001709; -.

RINEPPO: IPR00175; -.

REmm: PF00175; Oxidored_fad; 1.

REmm: PF00675; FAD_binding; 1.

REMINTS; PR00369; FLAVODOXIN.

REMINTS; PR00371; FPNCR.

RINTS; PR00371; FPNCR.

ROW_TER 945

SEQUENCE 945 AA; 108001 MW; 9A5ACFD40440A74F CRC64;
                                                                                                                                                                                                                                                                                                                                             1154 AA; 131709 MW; 42CD606E447254CB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE (FRAGMENT).
             PRT; 1154 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             945 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                  HSSP; P29477; INOS.
InterPro; IPR001094; -
InterPro; IPR001094; -
InterPro; IPR001094; -
InterPro; IPR001709; -
InterPro; IPR003097; -
Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00175; oxidored_fad; 1.
Pram; PR00175; pr00369; FLAVODOXIN.
PRINTS; PR00317; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                           1006 RMTLVFGCRRPDEDHLYR 1023
                                                                                                                                                                                                                                                                                                                                                                               Query Match 88.7%;
Best Local Similarity 83.3%;
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                             1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              PRELIMINARY;
             PRELIMINARY;
                                                                                                         Mammalia; Euther
NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID-9940;
                                                                                                                                                                                                                                                                                                                                              SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q9N175;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            artery.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9N175
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       m
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONTRACTOR OF SECULT OF SECU
셤
                                                                                                                                                                                                                                                                                                                                                                                                                              à
```

```
ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ő
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RN SEQUENCE FROM N.A.

RC STRAIN-WISTAR KYOTO;

RX MEDIATE-99326503; Pubbmed-10395902;

RX MEDIATE-99326503; Pubbmed-10395902;

RY MOLECULAR CLONING and characterization of the rat inducible nitric

RT Coxide synthase (LNOS) gene.";

RMDIATE-993366503; Pubbmed-10395902;

RWBIA 3230462; CAB46089.1; JOINED.

RWBIA, AJ230465; CAB46089.1; JOINED.

RWBIA, AJ230465; CAB46089.1; JOINED.

RWBIA, AJ230465; CAB46089.1; JOINED.

RWBIA, AJ230465; CAB46089.1; JOINED.

RWBIA, AJ230470; CAB46089.1; JOINED.

RWBIA, AJ230471; CAB46089.1; JOINED.

RWBIA, AJ230477; CAB46089.1; JOINED.

RWBIA, AJ230481; CAB46089.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID:10116;
                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                    ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 83.5%; Score 81; DB 11; Length 1147; Best Local Similarity 77.8%; Pred. No. 3.2e-05; Matches 14; Conservative 2; Mismatches 2; Indels (
        Length 945
                                                                                    1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1147 AA; 130613 MW; E76B3F8407D54CF6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
    Score 81; DB 6;
Pred. No. 2.6e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT; 1147 AA
                                                                                    2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               INDUCIBLE NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRIWTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
83.5%;
                                                                                                                                                                                                     833 RMTLVFGCRRPEEDHLY 849
                                                                                                                                                        1 RMTLVFGSRRPDEDHIY 17
    Query Match 83.5
Best Local Similarity 82.4
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR001094; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001433; -. InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 InterPro; IPR003097;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; AJ230487;
HSSP; P29477; 11
```

 \sim

```
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
PLODOM; PD001811; -; 1.
SEQUENCE 1147 AA; 130625 MW;
InterPro; IPR003097; -. Pfam; PF00175; oxidored_fad; 1. Pfam; PF00667; FAD_binding; 1.
                                                                                                                                                                                                                                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=7962;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oxidoreductase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q09590;
01-NOV-1996 (
01-NOV-1996 (
01-OCT-2000 (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       009590
                                                                                                                                                                                                                                     09PU92
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            009590
                                                                                                                                                                                                                         Q9PU92
                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
   οy
                                                                                                                                                                                                                                        δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         THE ST
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi,
Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Rattus.
NCBL_TaxID=10118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDINE-93221515; PubMed-7682072; Wood B.R., Berger H.Jr., Sherman P.A., Lapetina E.G.; Wetter and macrophages express an identical cytokine inducible nitric oxide synthase gene.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                    Oryctolagus cuniculus (Rabbit).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                       Shi Y., Pritchard K.A., Baker J.E.;
"Chronic myocardial hypoxia increases nitric oxide synthase and decreases caveolin-3.";
HERE REALS BOIL Med. 25.5703(2000).
EMBL; AF196443; ARC09500.1;
EMBL; AF200351; AAG24286.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 74; DB 6; Length 82;
Pred. No. 3e-05;
1; Mismatches 3; Indels
                                                                                                                                                                                                           SEQUENCE FROM N.A.
STRAIN-NEW ZEALAND WHITE; TISSUE-KIDNEY;
TSAO L.S., O'Blien W.J.;
Submitted (OCT-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                      82 AA; 9396 MW; 73244479A4B965F6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  090W28 PRELIMINARY; PRT; 1147 AA. 090W28, 01-WAY-2000 (TrEMBLrel. 13, Created) 01-WAY-2000 (TrEMBLrel. 13, Last sequence update) 01-WAY-2001 (TrEMBLrel. 16, Last annotation update) CYTOKINE INDUCIBLE NITRIC OXIDE SYNTHASE, INOS.
                                                                                                     01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE NOS2 (FRAGMENT).
                                                                                                                                                                                                                                                                                STRAIN-NEW ZEALAND WHITE; TISSUE-HEART MYOCARDIUM;
Pubmed-11053770;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Biochem. Biophys. Res. Commun. 191:767-774(1993).
HSSP; P29477; 1NOS.
                                                                                82 AA.
                                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        76.3%;
76.5%;
            1006 RMTLVFGCRHPEEDHLYQ 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 RMTLVFGSRRPDEDHIY 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  55 RMILVEGCRHPDEDHLY 71
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Local Similarity 76.5
Matches 13; Conservative
                                                                                PRELIMINARY;
 1 RMTLVFGSRRPDEDHIYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                InterPro; IPR001094; -. InterPro; IPR001433; -. InterPro; IPR001709; -. InterPro; IPR002369; -.
                                                                                                                                                                                                                                                                                                                                                                             HSSP; P00388; 1AMO.
InterPro; IPR001709; -.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                       NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                             82
                                                                                                                                                                                                                                                                                                                                                                                                               NON_TER
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                OPTTT6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
Q9QW28
                                                           RESULT
                       g
                                                                                             ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                      Bukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostoml;
Actinopterygii; Neopterygii; Teleostei; Buteleostei; Ostariophysi;
Cypriniformes; Cyprinidae; Cyprininae; Cyprinus.
                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                   Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 56; DB 13; Length 1127;
Pred. No. 0.58;
                                                                                      4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4; Indels
2CAFB983E56F651A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1127 AA; 127431 MW; 8317FC67C7A3DD9A CRC64;
                                                                                                                                                                                                                                                                               01-WAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE (EC 1.14.13.39).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Prodom; PD002221; -; 1.
PROSITE; PS00339; AA_TRNA_LIGASE_II_2; UNKNOWN_1.
                                                   70.1%; Score 68; DB 11; 72.2%; Pred. No. 0.0053;
                                                                                                                                                                                                                                                PRT; 1127 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       662 AA.
                                                                                      1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRIWTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                           Cyprinus carpio (Common carp)
                                                                                                                                           1006 RMTLVFGCRHRREDHLYQ 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       57.7%;
58.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (TrEMBLrel. 01, TrEMBLrel. 01, (TrEMBLrel. 15,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :||||| | | ||||| | 1007 VTLVFGCRGSDTDHLYK 1023
                                                                                                                         1 RMTLVFGSRRPDEDHIYQ 18
                                                   Query Match 70.19
Best Local Similarity 72.29
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2 MTLVFGSRRPDEDHIYO 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             10; Conservative
```

```
EMBL; AB042615; BAA95684.1;
         InterPro; IPR001094;
                                                                                                                                                                                                                                                                                                                                                                                     TISSUE-LUNG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09N176;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09N176
                                                                                                                                                                                                                                                        Q9JJY7;
                                                                                                                                                                                                                                              Q9JJY7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 11
Q9N176
                                                                                                                                                                                                                          RESULT 10
                                                                                                                                                                                                                                    Q9JJY7
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       DE DIT DE
 δ
                                                                                                                                                                                           q
                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                      REDUCTAGE.

REDUCTAGE.

REDUCTAGE.

REDUCTAGE.

RESP: P16435; Jan.

ROTHERPO: IPR001094; -...

R InterPro: IPR001433; -...

R InterPro: IPR001433; -...

R InterPro: IPR001709; -...

R Pfam; PF00475; oxidored_fad; 1.

R Pfam; PF00475; oxidored_fad; 1.

R PRINTS; PR00359; FLAVODXIN.

R PRINTS; PR00371; FPNCR.

W Hypothetical protein; Oxidoreductase; Flavoprotein; FMN; FAD; NADP;
                                                                                           Horike N., Takemori H., Sonobe H., Nonaka Y., Okamoto M.;
"Molecular cloning of NADPH-cytochrome P450 reductase from silkworm
eggs and its involvement in biosynthesis of 20-hydroxyecdysone during
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bukaryota; Metazoa; Arthropoda; Tracheata; Hexapoda; Insecta;
Pteryota; Neoptera; Endopterygota; Lepidoptera; Glossata; Ditrysia;
Bombycoidea; Bombycidae; Bombyx.
                               Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                         FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
28271950576B0EE8 CRC64;
                                                                                                                                                                               (PROBABLE).
-!- SIMILARITY: THE FMN-BINDING DOMAIN IS RELATED TO BACTERIAL FLAVODOXINS. THE FAD DOMAIN APPEARS HOMOLOGOUS WITH FERREDOXIN NADP+ REDUCTASE, NADH CYTOCHROME BS REDUCTASE, AND GLUTATHIONE
                                                                                                                                                                     -1 - COFACTOR: THIS FLAVOPROTEIN BINDS ONE MOLE EACH OF FAD AND FMN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ;
 PROBABLE NADPH-CYTOCHROME P450 REDUCTASE (EC 1.6.2.4) (CPR)
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 52; DB 5; Length 662;
Pred. No. 1.6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the embryogenesis.";
Submitted (MAY-2000) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-OCT-2000 (TrEMBLrel. 15, Created)
01-OCT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
NADPH CYTOCHROME P450 REDUCTASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 687 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT;
                                                                                                                                                                                                                                                                                                                                                                  Endoplasmic reticulum; Membrane.
                                                                                                                                                                                                                                                                                                                                                                                                                               75208 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             53.6%;
52.9%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | | :| | | | |:||:
545 MHLYYGCRHPDHDYIYK 561
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2 MTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 53.6
Best Local Similarity 52.9
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Bombyx mori (Silk moth)
                      Caenorhabditis elegans
                                                                                                                                                            FERROCYTOCHROME
                                                                                                                                                                                                                                                                                                                                                                                                                                AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                        SEQUENCE FROM N.A. STRAIN-BRISTOL N2;
                                                    NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                    NP_BIND
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                           NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09NKV3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q9NKV3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
Q9NKV3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  a
 á
```

```
ö
                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                        .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 51; DB 11; Length 306;
Pred. No. 1;
                                                                                                                                                                                                              Length 687;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5; Indels
                                                                                                                                                                                                                                                        4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Bachmann S.,
Bachmann S.,
No Synthases in the kidney.";
"No synthases in the kidney.";
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
InterPro; IPR001709; -.
InterPro; IPR00309; -.
Pfam: PF00667; FAD_binding; 1.
PROWATS; PRO0371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Oberbaeumer I., Welp H., Bachmann S.;
"A cDNA probe for rat NOS3 for in situ hybridization.";
Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          6466628BF253EE13 CRC64;
                                                                                                                                                 687 AA; 77688 MW; 57285830F159E0BD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    01-0cr-2000 (TrEMBLrel. 15, Created)
01-0cr-2000 (TrEMBLrel. 15, Last Sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
ENDOTHELIAL NITRIC OXIDE SYNTHASE (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-007-2000 (TrEMBLrel. 15, Created)
01-007-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
ENDOTHELIAL NITRIC OXIDE SYNTHASE 3 (FRAGMENT).
                                                                                                                                                                                                                 ,
,
                                                                                                                                                                                                              Score 52; DB 5
Pred. No. 1.6;
1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                   306 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT;
                                                           Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00369; FLAVODXIN.
PRINTS; PR00371; FPNCR.
SEQUENCE 687 AA; 77688 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                33803 MW;
                                                                                                                                                                                                                 53.6%;
66.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            52.68;
58.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        287 MTLVFGCRCSQLDHLYR 303
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match
Best Local Similarity 55...
The conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2 MTLVFGSRRPDEDHIYO 18
                                                                                                                                                                                                            Query Match
Best Local Similarity 66.7
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Rattus norvegicus (Rat).
InterPro; IPR001433; -. InterPro; IPR001709; -. InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                                                  4 LVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          306
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                306 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [2]
SEQUENCE FROM N.A.
TISSUE-LUNG;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=10116;
```

us-08-833-506c-31.rspt

Last sequence update) Last annotation update)

Created)

1206 AA.

PRT;

```
Cavia porcellus (Guinea pig).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
                                                                                                                                                                                                                                                       Derst C., Preisig-Mueller R., Rajan S., Daut J.;
"Cloning and sequencing of guinea pig NO synthases.";
Submitted (APR.1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AF146040; AAD29753.1;
EMBL; AF146040; AAD29752.1;
                                                                                                       01-NOV-1999 (TrEMBLrel. 12, Create
01-NOV-1999) (TrEMBLrel. 12, Last s
01-MAR-2001 (TrEMBLrel. 16, Last s
ENDOTHELIAL NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                              Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
1044 MTLVFGCRCSQLDHLYR 1060
                                                                                                                                                                                                                                                                                                                           HSSP; P29474; 3NOS.
InterPro; IPR001094; -.
InterPro; IPR001433; -.
InterPro; IPR001709; -.
InterPro; IPR001709; -.
                                                                                 PRELIMINARY;
                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=10029;
                                                                                                                                                                                                                   NCBI_TaxID=10141;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Cricetulus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               060451;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 060451
                                                                                 Q9WTK6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 14
                                                      RESULT 13
                                                                    Q9WTK6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                               ò
                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
           Ovis aries (Sheep).

Bukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
Bovidae; Caprinae; Ovis.
NCBL_TaxID=9940;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Schwemmer M., Bassenge E.; "Assembly and characterization of canine heart endothelial nitric oxide synthase cDNA and 5'-flanking sequence by homology (RT-)FCR
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Canis familiaris (Dog).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Carnivora; Fissipedia; Canidae; Canis.
                                                                                          SEQUENCE FROM N.A. Mershon J.L., Clark K.E.; "Estrogen increases the expression of iNOS in the ovine coronary
                                                                                                                                                                                                                                                                                                                                                          ;;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      52.6%; Score 51; DB 6; Length 1205; 58.8%; Pred. No. 4.4; ive 2; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                               6; Length 366;
                                                                                                                                                                                                                                                                                                                                                          Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C150CDEB01685BA5 CRC64;
                                                                                                                                                  EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                        794B274DA786A4A0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                          5;
                                                                                                                                                                                                                                                                                                                              Score 51; DB 6
Pred. No. 1.2;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT; 1205 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE=99369487; PubMed=10442857;
                                                                                                                                  artery.";
Submitted (JAN-2000) to the EMBL/CEMBL, AF223471; AAF34707.1; ...
InterPro; IPR001433; ...
InterPro; IPR001509; ...
InterPro; IPR031097; ...
Pfam; PF00175; oxidored_fad; 1...
Pfam; PF00677; FAD_binding; 1...
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                133045 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pfam: PF00175; oxidored_fad; 1. Pfam: PF00667; FAD_binding; 1. PRINTS; PR00369; FLAVODOXIN. PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                      40791 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Nitric Oxide 3:254-264(1999).
EMBL; AF143503; AAD52161.1; -.
HSSP; P29474; 3NOS.
InterPro; IPR001094; -.
InterPro; IPR001433; -.
                                                                                                                                                                                                                                                                                                                               52.6%;
58.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       01-MAY_2000 (TrEMBLrel. 13, 01-MAY_2000 (TrEMBLrel. 13, 01-OCT-2000 (TrEMBLrel. 15, NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                    289 MTLVFGCRCSQLDHLYR 305
                                                                                                                                                                                                                                                                                                                                                                                    2 MTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                              Query Match 52.6
Best Local Similarity 58.8
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR001709; -. InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                           366
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1205 AA;
                                                                                                                                                                                                                                                                                        366 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
Matches 10; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9615;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               TISSUE-HEART
                                                                                                                                                                                                                                                                           NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  cloning.
                                                                                                                                                                                                                                                             NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9TUX8;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9TUX8
                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 12
Q9TUX8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                                                                                                                                     ç
```

```
ö
                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Obgiya S., Goda T., Hoshino T., Shinriki N., Kamataki T.; "High-red yeast, construction of a novel strain of Saccharomyces cerevisiae stably exerting high activity of hamster cytochrome P450 reductase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   01-NOV-1996 (TrEMBLrel. 01, Last sequence update)
01-JUN-2000 (TrEMBLrel. 14, Last annotation update)
NADPH-CYTOCHROME P450 OXIDOREDUCTASE.
Cricetulus griseus (Chinese hamstrel).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Cricetinae;
                                                                                                                                                                                                                               ö
                                                                                                                             Score 51; DB 11; Length 1206; Pred. No. 4.4;
                                                                                                                                                                                                                               Indels
1206 AA; 133692 MW; EB4E792D3F9503DD CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Submitted (JAN-1996) to the EMBL/GenBank/DDBJ databases.
EMBL; D83230; BAA11856.1; -.
HSSP; P00388; 1AMO.
                                                                                                                                                                                                                               2,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          667 AA
                                                                                                                                                                                                                          2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001433; -.
InterPro; IPR001709; -.
InterPro; IPR003097; -.
Pfam: PF00175; oxidored_fad; 1.
                                                                                                                                  52.6%;
58.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01,
                                                                                                                                                                                                                                                                                                                                                                          1045 MTLVFGCRCSQLDHLYR 1061
                                                                                                                             Query Match
Best Local Similarity 58.8°
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                       2 MTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPR001094; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. STRAIN-GOLDEN;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DDT TO DD
```

2 MTLVFGSRRPDEDHIYQ 18

ð

9

```
;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Murakami H.O., Ogawa H., Nisimoto Y.;
"CDNA cloning and characterization of NADPH-cytochrome P-450 reductase
in human HL-60 ceal.",
Submitted (NOV-2000) to the EMBL/GenBank/DDBJ databases.
EMBL; AB051763; BAB18572.1; -
SEQUENCE 677 AA; 76637 MW; 4B414DCC3F1A3590 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens (Human).
Sukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID⇔9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                    .,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                           Query Match 50.5%; Score 49; DB 11; Length 667; Best Local Similarity 53.3%; Pred. No. 5.2; Matches 8; Conservative 4; Mismatches 3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 50.5%; Score 49; DB 4; Length 677; Best Local Similarity 53.3%; Pred. No. 5.2; Matches 8; Conservative 4; Mismatches 3; Indels
                                                                                                                                                                                          SEQUENCE 667 AA; 75850 MW; 2023F43DF4C1EF07 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              09H3MB PRELIMINARY; PRT; 677 AA.
09H3MB;
01-MAR-2001 (TrEMBLrel. 16, Created)
01-MAR-2001 (TrEMBLrel. 16, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
NADPH-CYTOCHROME P-450 REDUCTASE.
Pfam; PF00667; FAD_binding; 1. PRINTS; PR00369; FLAVODOXIN. PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | :| || || || :|:
551 LYYGCRRSDEDYLYR 565
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     4 LVFGSRRPDEDHIYO 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           4 LVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 15
09H3M8
AC 09H3M8;
DT 01-MAR-
DT 01-MAR-
DE NADPH-C
DE NA
                                                                                                                                               NADP.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           g
         ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               õ
```

Search completed: September 10, 2001, 14:11:14 Job time: 593 sec

| :| || || :|: |: 562 LYGCRRSDEDYLYR 576

qq

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
```

OM protein - protein search, using sw model

September 10, 2001, 14:09:53; Search time 23.82 Seconds (without alignments) 25.886 Million cell updates/sec Run on:

US-08-833-506C-31 97 1 RMTLVFGSRRPDEDHIYQ 18 Title: Perfect score: Sequence:

Scoring table:

BLOSUM62 Gapop 10.0 , Gapext 0.5

93435 Total number of hits satisfying chosen parameters: 93435 seqs, 34255486 residues Searched:

Minimum DB seq length: 0 Maximum DB seq length: 200000000

Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries

SwissProt_39:* Database :

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	ption	homo sapien	bos t	oryctolagus		homo sapien			homo s	gallu		bacil	rattus norv	bacillus me	_	homod	_	sus scrofa	mus musculu	rattus norv		-		cavia porce		sus scrofa	rattus norv	_	bacillus me	drosophila	haemophilus	caenorhabdi	herpesvirus	streptococc
	Description	P35228	027995	019114	006518	060591	P29477	054705	P81272	090703	Q14961	008336	062600	P14779	P70313	P29474	P29473	028969	Q920j4	P29476	P29475	019132	P16435	P37039	P37040	P04175	P00388	007994	P56948	027597	P45128	003755	33	068579
SUMMARIES	ID	NS2A_HUMAN	NOS2_BOVIN	NOS2_RABIT	NOS2_RAT	NS2D_HUMAN	NOS2_MOUSE	NOS2_CAVPO	NS2B_HUMAN	NOS2_CHICK	NS2C_HUMAN	CYPE_BACSU	NOS3_RAT	CPXB_BACME	NOS3_MOUSE	NOS3_HUMAN	NOS3_BOVIN	NOS3_PIG	NOS1_MOUSE	NOS1_RAT	NOS1_HUMAN	NOS1_RABIT	NCPR_HUMAN	NCPR_CAVPO	NCPR_MOUSE	NCPR_PIG	NCPR_RAT	NCPR_MUSDO	PPAC_BACME	NCPR_DROME	I	CUT1_CAEEL	- 1	PPAC STRMU
	<u>DB</u>	Н	7	٦	Н	٦		_	7	-	-	Н		Н	-	Н	Н	-	7	~	~	-	-	Н	-	Н	Н	-	-	. 	Н	Н	Н,	. -
	Length	1153	246	496	1147	1147	1144	1149	79	1136	69	1054	919	1048	1201	1202	1204	1204	1429	1429	1434	1435	9/9	677	677	677	677	671	16	619	1146	424	305	310
æ	Query Match	94.	83.5			83.5	79.4	•	٠.	63.9	•		•		52.6												50.5	δ.	•	٠	44.3		42.3	42.3
	Score	92	81	81	81	81	77	92	99	62	29	25	21	21	51	21	51	51	51	51	51	51	49	49	49	49	49	48	45	45	43	42	41	41
	Result No.	1	7	m	4	5	9	7	α	o i	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	53	30	31	32	33

. !	P95765 streptococc	P00389 oryctolagus	P52391 streptomyce	P52674 thiocapsa r	Q91f79 arabidopsis	P98164 homo sapten	P37487 bacillus su	P26519 petroselinu	P56886 rhizobium m	P71528 methanococc	P32818 bacillus ac	P19618 salmo trutt	
	PPAC_STRGC	NCPR_RABIT	NHS_STRAS	CYSJ_THIRO	ACA8_ARATH	LRP2_HUMAN	PPAC_BACSU	G3PC_PETCR	F16P_RHIME	NIFE_METMP	AMYM_BACAD	NCPR_SALTR	
,	-	П	Ч	Н	٦	Н	-	٦	~	Н	Н	Н	
	311	619	274	522	1074	4655	309	336	349	483	586	601	
	42.3	42.3	41.2	41.2	41.2	41.2	40.2	40.2	40.2	40.2	40.2	40.2	
	41	41	40	40	40	40	39	39	39	39	33	39	
	34	35	36	37	38	39	40	41	42	43	44	45	

ALIGNMENTS

ç

~

```
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DOMAIN
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NP_BIND
NP_BIND
NP_BIND
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MOD_RES
MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PDB;
 "Structural characterization of nitric oxide synthase isoforms reveals striking active-site conservation.";
Nat. Struct. Biol. 6:233-242(1999).
-I- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=99340067; Pubmed=10409685;
L1 H., Raman C.S., Glaser C.B., Blasko E., Young T.A., Parkinson J.F.,
Whitlow M., Poulos T.L.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 "Crystal structures of zinc-free and -bound heme domain of human inducible nitric-oxide synthase. Implications for dimer stability and comparison with endothelial nitric-oxide synthase.";
J. Biol. Chem. 274:21276-21284(1999).
                                                                                                                                                      Guo F.H., de Raeve R.H., Rice T.W., Stuehr D.J., Thunnissen F.B.J.M., Erzurum S.C.;
                                                                                                                                                                                   'Continuous nitric oxide synthesis by inducible nitric oxide synthase
                                                                                                                                                                                                                                                                                                                        ដ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Bloch K.D., Wolfram J.R., Brown D.M., Roberts J.D. Jr., Zapol D.G., Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.; Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, and NOS2C) colocalize to human chromosome 17."; Genomics 27:526-530(1995).
                                                                                                                                                                                                                                                                                                                                                                                                       MCLAY J.S., Chatterjee P., Nicolson A.G., Jardine A.G., McKay N.G., Ralston S.H., Grabowski P., Haites N.E., Macleod A.M., Hawksworth G.M.; McKey Droduction by human proximal tubular cells: a novel
                                  TISSUE-Glioblastoma;
MEDLINE-95155267; PubMed-7531687;
HOkari A., Zeniya M., Esumi H.;
"Cloning and functional expression of human inducible nitric oxide synthase (NOS) cDNA from a glioblastoma cell line A-172.";
J. Biochem. 116:575-581(1994).
                                                                                                                                                                                                                                             TISSUE-Cardiac myocytes;
MEDLINE-97304504; PubMed-9160867;
Luss H., Li R.-K., Shapiro R.A., Tzeng E., McGowan F.X., Yoneyama Hazkayama K., Geller D.A., Mickle D.A.G., Simmons R.L.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.25 ANGSTROMS) OF 82-528.

BEDLINE-089173237, PubMed-10074942.

Fischmann T.O., Hruza A., Rossetta J.D., Lunn C.A.,

Dolphin E., Prongay A.J., Reichert P., Lundell D.J., Narula S.K.,
                                                                                                                                                                                                                                                                                           Billiar T.R., "Dedifferentiated human ventricular cardiac myocytes express inducible nitric oxide synthase mRNA but not protein in response
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Taylor B.S., Alarcon L.H., Billiar T.R.; "Inducible nitric oxide synthase in the liver: regulation and
                                                                                                                                                                                               in normal human airway epithelium in vivo.";
Proc. Natl. Acad. Sci. U.S.A. 92:7809-7813(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  X-RAY CRYSTALLOGRAPHY (2.55 ANGSTROMS) OF 74-504
Biophys. Res. Commun. 205:85-91(1994).
                                                                                                                                                                                                                                                                                                                                             Mol. Cell. Cardiol. 29:1153-1165(1997)
                                                                                                                                                                                                                                                                                                                                                                                 TISSUE~Kidney;
MEDLINE~95165725; PubMed~7532248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHARACTERIZATION.
MEDLINE-98389865; PubMed-9721329;
                                                                                                                     SEQUENCE FROM N.A.
TISSUE-Airway epithelium;
MEDLINE-95372368; PubMed-7544004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE 96047340; Pubmed 7558036;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          1mmunomodulatory mechanism?";
Kidney Int. 46:1043-1049(1994).
                                                                                                                                                                                                                                                                                                                                    LPS.";
                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 380-473 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Blokhimita 63:766-781(1998).
                                                                                                                                                                                                                                                                                                                                   IL-1, TNF, IFNgamma, and
                        SEQUENCE FROM N.A.
                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CHARACTERIZATION.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Weber P.C
Biochem.
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the SWISS Institute of Bioinformatics and the ENBL outstation - the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                        THE ENZYME (BY SIMILARITY).

BENZYME REGULATION: REGULARIDED X CALCIUM/CALMODULIN (IN CONTRAST WITH MOUSE NOS2). ASPIRIN INHIBITS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY BE EXERTED AT THE LEVEL OF
                                                                                                                                                                          TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY (BY SIMILARITY).
SUBUNIT: HOMODIMER.
TISSUE SPECIFICITY: EXPRESSED IN THE LIVER, RETINA, BONE CELLS AND AIRWAY EPITHELIAL CELLS OF THE LUNG. NOT EXPRESSED IN THE
                                                   NITRIC OXIDE + N NADP(+).
COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES
TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
               MEDIATES TUMORICIDAL AND BACTERICIDAL ACTIONS.
CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding; Heme; Phosphorylation; Zinc; Metal-binding; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CALMODULIN-BINDING (POTENTIAL).
FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ALP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (BY CAPK) (POTENTIAL).
(BY CAPK) (POTENTIAL).
(BY CAPK) (POTENTIAL).
IN MACROPHAGES,
                                                                                                                                                                                                                                                                                       -!- INDUCTION: BY TREATMENT WITH ENDOTOXINS OR CYTOKINES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AND 6).
DIVERSE FUNCTIONS THROUGHOUT THE BODY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (IN REF.
(IN REF.
(IN REF.
(IN REF.
(IN REF.
(IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZINC.
PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PHOSPHORYLATION
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A H C H H H K C L G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HEME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 EMBL; L09210; AAA5971.1;
EMBL; L24553; AAA36375.1;
EMBL; V373029; CAA51512.1;
EMBL; U05810; AAA56666.1;
EMBL; U11511; AAB6066.1;
EMBL; D26525; BAA05531.1;
EMBL; AP068236; AAC19133.1;
EMBL; S75615; AAD14179.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Interpro; IPR003097; -.
Pfam: PF00667; FAD_binding; 1.
Pfam: PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Interpro; IPR001094; -. Interpro; IPR001433; -. Interpro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1NSI; 07-JAN-00.
2NSI; 07-JAN-00.
4NOS; 04-FEB-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            767
903
903
903
1076
1115
234
578
892
23
1154
1177
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   423
439
608
676
800
                                                                                                                                                                                                                                                                            PLATELETS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   163730;
```

NADP (ADP PART) (BY SIMILARITY).

3

```
NOS2_RABIT
                                                                                                                                                                                                                                                                                                                                                   FT
FT
SO
                                                                                                                                                                                              ŏ
                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MEDLINE=96047340; PubMed=758036;
MEDLINE=96047340; PubMed=9604;
MEDLINE=96047340; PubMed=9604;
MEDLINE=96047340; PubMed=9604;
MEDLINE=96047340; PubMed=9604;
MEDLINE=96047340; PubMed=9604;
MEDLINE=96047340; PubMed=9604;
MEDLINE=96047340;
MED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                      ö
                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         TISSUE=Bone marrow macrophage;
MEDLINE=95238970; PubMed=7536776;
Adler H., Frech B., Thoeny M., Pfister H., Peterhans E., Jungi T.W.;
Inducible nitric oxide synthase in cattle. Differential cytokine regulation of nitric oxide synthase in bovine and murine
                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalla; Eutheria; Cetartiodactyla; Ruminantia; Pecora; Bovoidea;
                                                                                                                                                                                                                            NOS2_BOVIN STANDARD; PRT; 246 AA.
Q27995; Q27985;
Q1.NOV-1997 (Rel. 35, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYMTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
                                                      ;
0
              Score 92; DB 1; Length 1153;
Pred. No. 9.2e-08;
); Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Interpro; IPR001433; -. Pfam; PF00175; oxidored_fad; 1. Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SUBUNIT: HOMODIMER (BY SIMILARITY),
SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            macrophages.";
J. Immunol. 154:4710-4718(1995)
                                                      0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 111-246 FROM N.A.
              94.88;
94.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL; U14640; AAC48470.1; -. EMBL; U18331; AAC48479.1; -.
                                                                                                                   1009 RMTLVFGCRRPDEDHIYQ 1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE OF 1-110 FROM N.A.
                                                                                             1 RMTLVFGSRRPDEDHIYQ 18
                Query Match
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               35
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Bovidae; Bovinae; Bos.
                                                                                                                                                                                                                                                                                                                                                                                            Bos taurus (Bovine),
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Multiqene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9913;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP; P29477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NON_TER
BINDING
                                                                                                                                                                                          g
                                                                                             δ
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lib.ch).
                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
STRAIN-NEW ZEALAND WHITE; TISSUE-Heart;
Broner C.W., Eledath F.M.;
"Rabbit iducible nitric oxide synthase gene-NOS II.";
Submitted (JAN-11997) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               -!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADP(+).
-!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROSIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE ENZYME (BY SIMILARITY).
-!- ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (PYRIMIDINE PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oryctolagus cuniculus (Rabbit).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Lagomorpha; Leporidae; Oryctolagus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
(INDUCIBLE NOS) (INOS) (FRAGMENT).
                                                                                                                                                                                                           ö
                                                                                                                                                       Length 246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme;
                                                                                                                                                     Score 81; DB 1; Length 246
Pred. No. 1.3e-06;
2; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              MW; AOA1D303C57F0EEC CRC64;
                                                                           28748 MW; 87C2E330C86A27F4 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- SUBUNIT: HOMODIMER (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-MAY-2000 (Rel. 39, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; U85094; AAB65618.1; -.
                                                                                                                                                       83.5%;
                                                                                                                                                                                                                                                                                            |||||||| |||:|||:|
|133 RMTLVFGCRRPEEDHLY 149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              56397
                                                                                                                                                                                                                                                               1 RMTLVFGSRRPDEDHIY 17
                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001433; -. InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           25
149
284
367
462
496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           496 AA;
                                                                           246 AA;
                                                                                                                                                       Query Match
Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID=9986;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            138
274
349
447
496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                               NOS2_RABIT
019114;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NP_BIND
NP_BIND
NP_BIND
NON_TER
SEQUENCE
NP_BIND
NON_CONS
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NON_TER
NP_BIND
NP_BIND
```

```
ö
                                                                                                                                                                                                                               Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-99221515; PubMed-7682072; Wood E.R., Berger H. Jr., Sherman P.A., Lapetina E.G.; "Hepatocytes and macrophages express an identical cytokine inducible nitric oxide synthase gene."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-SPRAGUE-DAWLEY; TISSUE-Aorta;
MEDLINE-9432531; PubMed-7519448;
Geng Y.J., Almquist M., Hansson G.K.;
"CDNA cloning and expression of inducible nitric oxide synthase from
                          Gaps
                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
STRAIN-WISSTAR; TISSUE-Pancreatic islets;
MEDLINE-95309542; PubMed-7540573;
MEDLINE-95309542; PubMed-7540573;
Karlsen A.E., Andersen H.U., Vissing H., Larsen P.M., Fey S.J.,
Cuartero B.G., Madsen O.D., Petersen J.S., Mortensen S.B.,
Mandrup-Poulsen T., Boel E., Nerup J.;
"Cloning and expression of cytokine-inducible nitric oxide synthase
Diabetes 44:753-758(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Galea E., Reis D.J., Feinstein D.L., "Cloning and expression of inducible nitric oxide synthase from rat
                                                                                                                                                                                                                                                                                      TISSUE-Vascular smooth muscle;
BEDLINE-29191721, Pubmed-7680561;
Nunckawa Y., Ishida N., Tanaka S.;
"Cloning of inducible nitric oxide synthase in rat vascular smooth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Ϋ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               calmodulin-dependent nitric-oxide synthase from rat liver and its expression in COS 1 cells.";
                                                                                                                 OG6518; P97774; O35765; O35766; O64558; O64005; O63267; O1-JUN-1994 (Rel. 29, Created) O1-CT-1996 (Rel. 34, Last sequence update) O1-CCT-1906 (Rel. 34, Last sequence update) NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II) NOS2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TISSUE-Liver;
MEDLINE-94039959; PubMed-7693462;
Adachi H., Iida S., Oguchi S., Ohshima H., Suzuki H., Nagasaki Rawasaki H., Sugimura T., Esumi H.;
"Molecular cloning of a cDNA encoding an inducible
                        ö
83.5%; Score 81; DB 1; Length 496; 77.8%; Pred. No. 2.8e-06; ive 2; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Biochem. Biophys. Res. Commun. 191:767-774(1993)
                                                                                                                                                                                                                                                                                                                                                Biochem. Biophys. Res. Commun. 191:89-94(1993)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN SPRAGUE DAWLEY; TISSUE Hepatocytes;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN-SPRAGUE-DAWLEY; TISSUE-AStrocytes; MEDLINE-94231594; PubMed-7513765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Neurosci. Res. 37:406-414(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Eur. J. Biochem. 217:37-43(1993).
                                                       380 RMTLVFGCRHPEEDHLYQ 397
                                             1 RMTLVFGSRRPDEDHIYQ 18
                       14; Conservative
                                                                                                                                                                                                                      Rattus norvegicus (Rat).
           Best Local Similarity
                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                      NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                      muscle cells."
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              astrocytes
 Query Match
                      Matches
                                              õ
                                                                  q
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb.ch/ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE OF 426-788 FROM N.A.
STRAIN DAHL/RAPP SALT SENSITIVE STRAIN; TISSUE-Vascular smooth muscle;
MEDLINE-98195092; Pubmed-9535415;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            -1- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) ° CITRULLINE + N NTRIC OXIDE + N NADP(+).
-1- COFACTOR: HEME. BINDS OWE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPPERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SIMILARITY).
SIMILARITY).
SIMILARITY).
SIBULIARITY HOMODIMER (BY SIMILARITY).
SIBUNIT: HOMODIMER (BY SIMILARITY).
SIBULIARY THICK ASCENDING LIMB, WITH MINOR AMOUNTS IN THE MEDULLARY THICK ASCENDING LIMB, WITH MINOR AMOUNTS.
MEDULLARY COLLECTING DUCT AND VASA RECTA BUNDLE.
INDUCTION: BY INTERPERON GAMMA AND LIPOPOLYSACCHARIDE.
SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             THE ENZYME.

ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN. ASPIRIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Chen P.Y., Gladish R.D., Sanders P.W.;
"Vascular smooth muscle nitric oxide synthase anomalies in Dahl/Rapp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Sequence analysis of inducible nitric oxide synthase in rat kidney,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             INHIBITS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-WISTAR; TISSUE-Renal glomerulus;
Saura M., Zaragoza C., Martinez-Dalmau R., Perez-Sala D., Lamas S.;
"Advances in the studies of NO synthesis regulation in mesanglial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Location of an inducible nitric oxide synthase mRNA in the normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       <u>`</u>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Morrissey J.J., McCracken R., Kaneto H., Vehaskari M., Montani
                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE-97070590; Pubmed-8913516;
Tsutsumishita Y., Kawai Y., Takahara H., Onda T., Miyoshi J.,
                                                                                                              Kosuga K., Yui Y., Hattori R., Sase K., Eizawa H., Aoyama
John R., Sasayama S.;
                                                                                                                                                                                                             "Cloning of an inducible nitric oxide synthase from rat polymorphonuclear neutrophils."; Endothelium 2:217-221(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-SPRAGUE-DAWLEY; TISSUE-Renal glomerulus; MEDLINE-94276509; PubMed-7516453;
                                  Biochim. Biophys. Acta 1218:421-424(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        lung, and uterus.";
Biol. Pharm. Bull. 19:1374-1376(1996).
vascular smooth muscle cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  salt-sensitive rats.";
Hypertension 31:918-924(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Kidney Int. 45:998-1005(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 509-740 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 479-655 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 420-479 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nefrologia 16:35-39(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Futaki S., Niwa M.;
                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  TISSUE-Myocardium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Klahr S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     kidney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cella
```

NS2D_HUMAN STANDARD; PRT; 1147 AA.
060501; 060604;
30-MAY_2000 (Rel. 39, Created)
30-MAY_2000 (Rel. 39, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE IID (EC 1.14.13.39) (NOS, TYPE II D)

NS2D_HUMAN

Homo sapiens (Human). Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.

(INDUCIBLE NOS) (INOS).

NCBI_TaxID-9606;

"Complete coding sequence of inducible nitric oxide synthase from human heart and skeletal muscle of patients with chronic heart

failure.

SEQUENCE FROM N.A.
TISSUE-Skeletal muscle, and Heart muscle;
MEDLINE-99066690; PubMed-9851365;
Adams V., Krabbes S., Jiang H., Yu J., Rahmel A., Gielen S., Schuler G., Hambrecht R.;

```
HEME (BY SIMILARITY).
CALMODULIN-BINDING (POTENTIAL).
FAM (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIGOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
ZINC (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PHILETELO, FIRE DESCRIPTION OF THE PER SECOND OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                7 AND 8)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             5).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AND 9).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     6)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Score B1; L. Pred. No. 6.8e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ET -> VP (IN REF. 1)
Q -> P (IN REF. 10).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ZINC
                                                                                                                                                                                                                                AF006619; AAC16401.1; --
                                                                                                                                                                                                                                                                                  U48829; AAB18620.1; -. S71597; AAB31028.2; -. L36063; AAC02242.1; -.
                                                                                                                            L12562; AAA41720.1; .. X76881; CAA54208.1; -. D44591; BAA07994.1; -. D83661; BAA12035.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83.5%;
77.8%;
                                                                          AAC13747.1;
BAA02090.1;
                        BAA03138.1;
                                                                                                                                                                                                                                                                                                                                                                                                 HSSP; P29477; 1NOC.
InterPro; IPR001094; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                      InterPro; IPR001433; -. InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               197
526
                                                                                                                                                                                                                                                                                                                                                                        PIR; JC1472; JC1472.
                                                                          U03699;
D12520;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
CON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      DOMAIN
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NP_BIND
NP_BIND
NP_BIND
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BINDING
                                                                                                                                                                                                          EMBL;
EMBL;
EMBL;
                                                                                                                                                                                                                                                                                     EMBL;
EMBL;
                                                                                                                                                        EMBL;
                                                                                                                                                                                                                                                                                                                                             EMBL;
                                                                                                                                  MBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                METAL
                                                                                                                                                                                    EMBL;
                                                                                                      EMBL;
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                              NILLIC OXIGE 2:242-249(1998).

-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MAROPHAGES, NO MEDIATES TUMORICIDAL AND BACTERICIDAL ACTIONS. MAY BE INVOLVED IN THE PATHOGENESIS OF DILATED CARDIOMYOPATHY OR OF EXERCISE INVOLERANCE OBSERVED IN PATIENTS WITH CHRONIC HEART FAILURE.
-!- CATALYTIC ACTIVITY: L-AGRININE + N NADPH + M O(2) = CITRULLINE + NTTRIC OXIDE + N NADP(+).
-!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TERRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   HEME (BY SIMILARITY).

CALMODULIN-BINDING (POTENTIAL).

FAN (ADP PART) (BY SIMILARITY).

FAD (ADP PART) (BY SIMILARITY).

FAD (FLAVIN PART) (BY SIMILARITY).

NADP (RIBOSE PART) (BY SIMILARITY).

NADP (ADP PART) (BY SIMILARITY).

ZINC (BY SIMILARITY).

ZINC (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
OXIGOREGUCTASSE; NADP; FPN; Calcium-binding; Calmodulin-binding;
Heme; Zinc; Metal-binding; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SUBUNIT: HOMODIMER (BY SIMILARITY).
TISSUE SPECIFICITY: EXPRESSED IN THE HEART AND SKELETAL MUSCLE
DURING CHRONIC HEART FAILURE, BUT NOT IN HEALTHY INDIVIDUALS.
SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THE ENZYME (BY SIMILARITY).
ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (BY SIMILARITY)
S (IN AAC83554)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; AF049656; AAC83553.1; --
EMBL; AF051164; AAC83554.1; --
HSSP; P29477; INOC.
InterPro; IPR001094; --
InterPro; IPR001433; --
InterPro; IPR001709; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR003097; -
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  993
1088
107
112
248
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Heme; Zinc;
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     DOMAIN
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NP_BIND
NP_BIND
```

ö

Gaps

ö

Indels

2; Mismatches

Conservative

Best Local Similarity Matches 14; Conserv

1006 RMTLVFGCRHPEEDHLYQ 1023

g

RMTLVFGSRRPDEDHIYQ 18

٦

à

ဖ

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         XIE Q.-W., Cho H.J., Calaycay J., Mumford R.A., Swiderek K.M.,
Lee T.D., Ding A., Troso T., Nathan C.;
"Cloning and characterization of inducible nitric oxide synthase from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-92357701; PubMed-1379716;
Lowenstein C.J., Glatt C.S., Bredt D.S., Snyder S.H.;
"Cloned and expressed macrophage nitric oxide synthase contrasts with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BALB/CBYJ, SJL/J, NOD/LTJ, AND B10.S/J; TISSUE~Spleen;
                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 116-496.
MEDLINE-97477482; PubMed-9334294;
Crane B.R., Arvai A.S., Gachhul R., Wu C., Ghosh D.K., Getzoff E.D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
MEDLINE-92210618: PubMed-1372907;
Lyons C.R., Orloff G.J., Cunningham J.M.;
"Molecular cloning and functional expression of an inducible nitric oxide synthase from a mutrine macrophage cell line.";
J. Biol. Chem. 267:6370-6374(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Mus
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
MEDLINE-960087731; Pubmed-7503239;
Kone B.C., Schwoebel J., Turner P., Mohaupt M.G., Cangro C.B.;
"Role of NF-kappa B in the regulation of inducible nitric oxide synthase in an MTAL cell line.";
                                                                                                                                                                                                                                                                                                                                                  P29477; 070515; 070516; 01-ARR-1993 (Rel. 25, Created)
01-ARR-1993 (Rel. 25, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYMTHAS9, LAST annotation update)
(INDUCIBLE NOS) (INOS) (MACROPHAGE NOS) (MAC-NOS).
                                                                                                                                                                                                         ;
                                                                                                                                                                             DB 1; Length 1147;
D -> A (IN AAC83554).

G -> E (IN AAC83554).

P -> O (IN AAC83554).

A -> T (IN AAC83554).

H -> N (IN AAC83554).

T. -> N (IN AAC83554).

E -> K (IN AAC83554).

E -> K (IN AAC83554).

F -> V (IN AAC83554).

F -> V (IN AAC83554).

F -> V (IN AAC83554).
                                                                                                                                                                   Score 81; DB 1; Leuye...
Pred. No. 6.8e-06;
2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      the brain enzyme.";
Proc. Natl. Acad. Sci. U.S.A. 89:6711-6715(1992)
                                                                                                                                                                                                                                                                                                                                       PRT; 1144 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            J. Physiol. 269:F718-F729(1995)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDLINE-92229444; PubMed-1373522;
                                                                                                                                 MW;
                                                                                                                                                                                                                                                    1006 RMTLVFGCRHPEEDHLYQ 1023
                                                                                                                                                                           83.5%;
77.8%;
                                                                                                                                 AA; 130528
                                                                                                                                                                                                                                   1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     mouse macrophages.";
Science 256:225-228(1992).
                                                                                                                                                                                                      14; Conservative
                                                                                                                                                                                                                                                                                                                                       STANDARD;
            399
640
731
937
1009
11024
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-DBA/2J, BALB,
Ma R.Z., Teuscher C
                                                                                                                                                                           Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID-10090;
                                                                     1008
1024
1076
11129
                                                                                                                                                                                                                                                                                                                                                                                                                                          NOS2 OR INOSL.
                                                                                                                                                                                                                                                                                                                                       NOS2_MOUSE
                                                                                                  CONFLICT
CONFLICT
SEQUENCE
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                        CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                         NOS2_MOUSE
ID
                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                  g
                                                                                                                                                                                                                                                                                                                                       ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseélsb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -!- ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN. ASPIRIN INHIBITS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY BE EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL
                                                                                                    MEDLINE-20031637; PubMed-10562538; Ghosh D.K., Crane B.R., Ghosh S., Wolan D., Gachhui R., Crooks C., Ghosh D.K., Crane B.R., Ghosh S., Wolan D., Gachhui R., Crooks C., Presta A., Tainer J.A., Getzoff E.D., Stuehr D.J.; "Inducible nitric oxide synthase: role of the N-terminal beta-hairpin hox and pterin-binding segment in dimerization and tetrahydrobiopterin interaction."; EMBO J. 18:6260-6270(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     TISSUB-Macrophage;
MEDLINE-95372392; PubMed-7544010;
Amin A.R., Vyas P., Attur M., Leszczynska-Piziak J., Patel I.R.,
Weissmann G., Abramson S.B.;
"The mode of action of aspirin-like drugs: effect on inducible nitric
                                                                                                                                                                                                                                             X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 77-496.
MEDLINE-98182450; PubMed-9516116;
Crane B.R., Arval A.S., Ghosh D.K., Wu C., Getzoff E.D., Stuehr D.J.,
                                                                                                                                                                                                                                                                                                          Structure of nitric oxide synthase oxygenase dimer with pterin and
                                                                                                                                                                                                                                                                                                                                                                                          X-RAY CRYSTALLOGRAPHY (2.35 ANGSTROMS) OF 77-499.
MEDLINE-20031638; PubMed-10562539;
Cane B.R., Rosenfeld R.J., Arval A.S., Ghosh D.K., Ghosh S.,
Tainer J.A., Stuehr D.J., Getzoff E.D.;
"N-terminal domain swapping and metal ion binding in nitric oxide
           "The structure of nitric oxide synthase oxygenase domain and inhibitor complexes.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        -!- SUBUNIT: HOMODIMEK.
-!- TISSUE SPECIFICITY: MACROPHAGES.
-!- INDUCTION: BY TREATMENT WITH ENDOTOXINS OR CYTOKINES.
-!- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY
                                                                                       OF 77-496
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; M87039; AAA39315.1; -.
EMBL; M92649; -; NOT_ANNOTATED_CDS.
EMBL; M84373; AAA39834.1; -.
EMBL; AF065919; AAC17914.1; -.
EMBL; AF065920; AAC17915.1; -.
EMBL; AF065921; AAC17915.1; -.
EMBL; AF065922; AAC17915.1; -.
EMBL; AF065923; AAC17915.1; -.
EMBL; AF065923; AAC17915.1; -.
EMBL; A43271; A43271.
                                                                                     X-RAY CRYSTALLOGRAPHY (2.35 ANGSTROMS)
                                                                                                                                                                                                                                                                                                                                                        Science 279:2121-2126(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 synthase dimerization.";
EMBO J. 18:6271-6281(1999).
                                   inhibitor complexes.";
Science 278:425-431(1997).
   D.J., Tainer J.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     EFFECT OF ASPIRIN.
                                                                                                                                                                                                                                                                                                        Tainer J.A.;
                                                                                                                                                                                                                                                                                                                                         substrate.
```

```
TISSUE=Leukocyte;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (FRAGMENTS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NP_BIND
NP_BIND
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 8
NS2B_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
Series of the se
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            STRAIN-HARTLEY; TISSUE-Lung;
MEDLINE-98343971; PubMed=9677342;
Shirato M., Sakamoto T., Uchida Y., Nomura A., Ishii Y., Iijima H.,
Goto Y., Hasegawa S.;
"Molecular cloning and characterization of Ca2+-dependent inducible nitric oxide synthase from guinea-pig lung.";
                                                                                                                                                                                                                                                                                                                                                                                                                            FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Cavia porcellus (Guinea pig).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Hystricognathi; Caviidae; Cavia.
                                                                                                                                                                                                                                                                                                                                                                                                                                           FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
ANDP (ADP PART) (BY SIMILARITY).
ZINC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -> L (IN STRAIN SJL/J).
-> F (IN STRAIN BALB/CBXJ).
-> T (IN REF. 4).
-> V (IN REF. 2).
-> G (IN REF. 2).
0735BE676113457F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                              CALMODULIN-BINDING (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1144;
                                                                                                                                                                                                                                                                                                                         PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN NOD/LTJ).
                                                                                                                                                                                                                                                                                                                                                                              Multigene family; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79.4%; Score 77; DB 1; Le 72.2%; Pred. No. 3.3e-05; ive 3; Mismatches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                PRT; 1149 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZINC.
C -> R (IN S
P -> L (IN S
S -> F (IN S
K -> T (IN R
A -> V (IN R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              F > 0
                                                                                                                                                                                                                                                                                                                                                                                                 HEME
                                                                                                                                                                                                                                                                        Interpro; IPR003097; -.
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-MAY-2000 (Rel. 39, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1003 RMSLVFGCRHPEEDHLYQ 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               130574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (INDUCIBLE NOS) (INOS).
                                                                                                                                                                                                                             InterPro; IPR001094; -. InterPro; IPR001433; -. InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                            648
772
907
990
1085
109
109
211
                                                                            23-MAR-99.
23-MAR-99.
08-DEC-99.
                                                                                                                                                                               15-DEC-99.
29-MAR-00.
                                                                                                                                                                                                                 Nos2
                                                                                                                                                                                                                                                                                                                                                                              Zinc; Metal-binding;
                                                                                                                              04-FEB-00
                                                                                                                                                                06-FEB-00
                                                               23-MAR-99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity
les 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NCBI_TaxID=10141;
                                                                                                                                                                                                            MGI:97361;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOS2 OR NOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                NOS2_CAVPO
054705;
                                                                                                                                                                               100M;
1DD7;
                                                                              2NOD;
3NOD;
                                                                                                              1DF1;
                                                                                                                              1DWV;
                                                                                                                                                LDWW;
                                                                                                                                                                LDWX;
                                                                  NOD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                              NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                             NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                 BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                              NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                              DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NOS2_CAVPO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loca
Matches
                                                                              PDB;
PDB;
PDB;
PDB;
PDB;
PDB;
                                              PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profilt institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
Biochem, J. 333:795-799(1998).
-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY.
                                                                                                                                   -!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FWN, ALSO REQUIRES TTRAALYTOROBIOPFREIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE ENZYME (BY SIMILARITY).
-!- ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (IN CONTRAST
                                                                                                                                                                                                                                                                   -i- SUBUNIT: HOMODIMER (BY SIMILARITY).
-i- TISSUE SPECIFICITY: EXPRESSED IN THE LUNG AND COLON. NOT DETECTED IN THE HEART, AORTA, LIVER, KIDNEY, AND SPLEEN.
-i- INDUCTION: BY LIPOPOLYSACCHARIDE (LPS) IN KIDNEY, SPLEEN, AND COLON. EXPRESSION IS REDUCED IN THE PRESENCE OF LPS IN LUNG.
-i- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                           CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADP(+).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC-OXIDE SYNTHASE IIB (EC 1.14.13.39) (NOS, TYPE II B) (NOSIIB)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CALMODULIN-BINDING (POTENTIAL).
FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Buteleostomi;
Mammalia; Butheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
W, 66D595A2486DB50E CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ;;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             78.4%; Score 76; DB 1; Length 1149; 72.2%; Pred. No. 4.8e-05; ive 3; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               79 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ψ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Interpro; IPR003097; -...
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             EMBL; AF027180; AAC33177.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1008 RMTLLFGCRHPEEDHIYK 1025
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    130631
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                family.
199
528
653
777
912
995
1090
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Interpro; IPR001094; -. Interpro; IPR001433; -. Interpro; IPR001709; -.
                                                                                                                                                                                                                                                   WITH MOUSE NOS2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            HSSP; P29477; 2NOS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1075
1149
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Heme; Multigene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         199
508
622
766
902
```

us-08-833-506c-31.rsp

œ

```
2 MTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NP_BIND
NP_BIND
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
   ŏ
                                                                                                                                                                                                                                     This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                      -!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIATES TUMORICIDAL AND BACTERICIDAL ACTIONS.
-!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) - CITRULLINE +
                                                                                                                      NITRIC OXIDE + N NADP(+).
-1- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE BNZYME (BY SIMILARITY).
-1- ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
MEDLINE-9621613; PubMed-8662618;
Lin A.W., Chang C.C., McCormick C.C.;
"Molecular cloning and expression of an avian macrophage nitric-oxide synthase cDNA and the analysis of the genomic 5'-flanking region.";
J. Biol. Chem. 271:11911-11919(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gallus gallus (Chicken).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Archosauria; Aves; Neognathae; Galliformes; Phasianidae; Phasianinae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                        Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding;
              Zapol D.G.,
           Bloch K.D., Wolfram J.R., Brown D.M., Roberts J.D. Jr., Zapol D.G. Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.; Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, and NOS2C) colocalize to human chromosome 17."; Genomics 27:526-530(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                              NADP (RIBOSE PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NOS2_CHICK STANDARD; PRT; 1136 AA.
090703; 090677; 090934;
01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
(INDUCIBLE NOS) (INOS) (MACROPHAGE NOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 66; DB 1; Length 79;
Pred. No. 0.00014;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 83705AE0C36A94E0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1; Mismatches
                                                                                                                                                                                                  -1- SUBUNIT: HÖMODIMER (BY SIMILARITY).
-1- SIMILARITY: BELONGS TO THE NOS FAMILY.
MEDLINE-96047340; PubMed-7558036;
                                                                                                                                                                                                                                                                                                                                     EMBL; U18332; AAC50232.1; -. EMBL; U18333; AAC50233.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    68.0%;
72.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 171-472 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                  8667 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ||| || | | |:||||||| 35 RMTPVFECRSPNEDHIYQ 52
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match 68.0
Best Local Similarity 72.2
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                    family.
                                                                                                                                                                                                                                                                                                                                                                                                                           >30
31
                                                                                                                                                                                                                                                                                                                                                               P00388; 1AMO.
                                                                                                                                                                                                                                                                                                                                                                                                                           15
30
79
79 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NCBI_TaxID: 9031;
                                                                                                                                                                                                                                                                                                                                                                                                  Heme; Multigene
                                                                                                                                                                                       SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                            600719
                                                                                                                                                                                                                                                                                                                                                                                                                                                    NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                         NON CONS
                                                                                                                                                                                                                                                                                                                                                                                                                            BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gallus
                                                                                                                                                                                                                                                                                                                                                                 HSSP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NOS2_CHICK
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            g
 ð
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BML outstation the European Bioinformatics. Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                    in chick embryonic ventricular myocytes.";
Cardiovasc. Res. 38:405-413(1998).
-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. NO MAY SERVE AS BOTH A
PARACRINE AND AUTOCRINE SIGNAL FOR MODULATING OSTEOCLAST BONE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              -1- CATALTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADP(+).

-1- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE ENZYME (BY SIMILARITY).

-1- ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN.

-1- SUBUNIT: HOMODIMER (BY SIMILARITY).

-1- INDUCTION: BY TREATMENT WITH LIPOPOLYSACCHARIDES (LPS) OR CYTOKINES, BUT NOT IN OSTBOCLASTS WHERE THEY ARE INDUCED BY CALCIUM AND PMA (PHORBOL 12-MYRISTPATE 13-ACETATE).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CALMODULIN-BINDING (POTENTIAL).
FEMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (ELAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
ZINC (BY SIMILARITY).
                                               oxide synthase expression and nitric oxide production in avian osteoclast-like cells.";
                                                                                                                                                                                                                                                                                                                            Shimizu T., Kinugawa K., Sugishita Y., Sugishita K., Harada K.,
Matsui H., Kohmoto O., Serizawa T., Takahashi T.;
"Molecular cloning and expression of inducible nitric oxide synthase
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme; Zinc; Metal-binding.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                              Sunyer T., Rothe L., Jiang X., Osdoby P., Collin-Osdoby P.; "Proinflammatory agents, IL-8 and IL-10, upregulate inducib
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Length 1136;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 62; DB 1;
Pred. No. 0.012;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Mismatches
                                                                                                                                                              Cell. Biochem. 60:469-483(1996)
                                                                                                                                                                                                                                                            TISSUE-Heart;
MEDLINE-98375063; PubMed-9709401;
MEDLINE-96252270; PubMed-8707887;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR003097; -. Pfam; PF00667; FAD_binding; 1. Pfam; PF00175; oxidored_fad; 1
                                                                                                                                                                                                                              SEQUENCE OF 646-986 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL, U46504, AAC59886.1; -. EMBL, U34045; AAB17499.1; -. EMBL, D85422; BAA12817.1; -. HSSP; P00388; IAMO.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           63.9%;
64.7%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             129649
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        InterPro; IPR001094; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   InterPro; IPR001433; -. InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 197
526
651
775
910
993
1088
112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESORPTION.
```

```
(EC 1.6.2.4)]
                                                                                                                                                              STRAIN=168
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        12
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 1
 QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                      Block K.D., Wolfram J.R., Brown D.M., Roberts J.D. Jr., Zapol D.G., Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.;
"Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, and NOS2C) colocalize to human chromosome 17.";
Genomics 27:526-530(1995).

-! FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIATES TUMORICIDAL AND BACTERICIDAL ACTIONS.

-! CARALYTIC OXIDE (NO MADPH + M O(2) = CITRULLINE + NUMBER OXIDE).
                                                                                                                                                                                                                                                                                                                                                                                   NITRIC OXIDE + N NADP(+).

-!- CORACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF THE BNZYME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Oxidoreductase; NADP; FAD; FMN; Calcium-binding; Calmodulin-binding; Heme; Multigene family.
                                                                                                        30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC-OXIDE SYNTHASE IIC (EC 1.14.13.39) (NOS, TYPE II C) (NOSIIC)
                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NADP (RIBOSE PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                     -!- ENZYME REGULATION: REGULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 59; DB 1; Length 69;
Pred. No. 0.0019;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2C29D595F93FB293 CRC64;
                                                                      69 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1054 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -! - SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBUNIT: HOMODIMER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                         PRT;
                                                                                                                                                                                                                                                 TISSUE=Leukocyte;
MEDLINE=96047340; PubMed=7558036;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; U18335; AAC50245.1; -.
EMBL; U18334; AAC50245.1; JOINED.
HSSP; P00388; 1AMO.
                                                                                             30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequ
30-MAY-2000 (Rel. 39, Last anno
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 60.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             8432 MW;
1007 MILLFGCRHPDMDHIYK 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                38 RRILVEWCRRPDEDRHYR 55
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 60.8
Best Local Similarity 66.7
Matches 12; Conservative
                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STANDARD;
                                                                                                                                                                       Homo sapiens (Human)
                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           69 AA;
                                                                                                                                                                                                            NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  69
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      600720;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CYPE_BACSU
ID CYPE_BACSU
AC 008336;
                                                                                                                                               (FRAGMENT).
                                                                       NS2C HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NP_BIND
NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NON_TER
                                               RESULT 10
NS2C_HUMAN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 11
           g
                                                                         셤
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
```

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 FERROCYTOCHROME.
-!- COFACTOR: BINDS ONE MOLE BACH OF FAD AND FWN (BY SIMILARITY).
-!- SIMILARITY: IN THE N-TERMINAL SECTION; BELONGS TO THE CYTOCHROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    -!- FUNCTION: FUNCTIONS AS A FATTY ACID MONOOXYGENASE. THE REDUCTASE DOMAIN IS REQUIRED FOR ELECTRON TRANSFER FROM NADP TO CYTOCHROME P450 (BY SIMILARITY).
-!- CATALYTIC ACTIVITY: NADPH + 2 FERRICYTOCHROME = NADP(+) +
01-OCT-2000 (Rel. 40, Created)
01-OCT-2000 (Rel. 40, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
PROBMBLE BIFUNCTIONAL P-450.NADPH-P450 REDUCTASE 2 [INCLUDES:
CYTOCHROME P450 102 (EC 1.14.14.1); NADPH-CYTOCHROME P450 REDUCTASE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sorokin A., Bolotin A., Purnelle B., Hilbert H., Lauber J., Duesterhoeft A., Ehrlich S.D.;
"Sequence of the Bacillus subtilis genome region in the vicinity of the lev operon reveals two new extracytoplasmic function RNA Microbiology 143:2939-2943(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     InterPro; IPRU0Joy,, ...
Pfam; PF00067; p50; 1.
Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00381; FPNCR.
PRINTS; PR00381; P450.
PRINTS; PR00464; EP450II.
PROSITE; PS00086; CYTOCHROME_P450; 1.
Oxidoreductase; Monooxygenase; Electron transport; Membrane; Heme; Multifunctional enzyme; FMN; FAD; Flavoprotein; NADP.
CYTOCHROME P450.

"""" 475 CYTOCHROME P450.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                53.6%; Score 52; DB 1; Length 1054; 60.0%; Pred. No. 0.54;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HEME (BY SIMILARITY).

W; 705F8E27866CA110 CRC64;
                                                                                                                                                                                                                                                              Bacteria; Firmicutes; Bacillus/Clostridium group;
Bacillus/Staphylococcus group; Bacillus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                              MEDLINE=97453479; PubMed=9308178;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  118675 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U93874; AAB80867.1; --
EMBL; 299117; CAB14658.1; --
HSSP, P14779; IFAG.
Subtlist; BG12299; CypE.
InterPro; IPR001128; --
InterPro; IPR001433; --
InterPro; IPR001403; --
InterPro; IPR002402; --
InterPro; IPR003097; --
InterPro; IPR003097; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    4 LVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1054 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Best Local Similarity
Matches 9; Conserv
                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                             Bacillus subtilis
                                                                                                                                                                                                  CYPE OR CYP102A3
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            P450 FAMILY.
                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=1423;
```

Wed

```
NOS3_RAT STANDARD; PRT; 919 AA.

062600; 088672; 089041; Q62734;
01-NOV-1997 (Rel. 35, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC-OXIDE SYNTHASE, ENDOTHELIAL (EC 1.14.13.39) (EC-NOS) (NOS, TYPE III) (NOSIII) (ENDOTHELIAL NOS) (CONSTITUTIVE NOS) (CNOS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             regulated during lung development.";
Am. J. Physiol. 268:L589-L595(1995).
-I- Physiol. 268:L589-L595(1995).
-I- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS IMPLICATED IN VASCULAR SMOOTH MUSCLE RELAXATION THROUGH A CGMP-MEDIATED SIGNAL TRANSDUCTION PATHANY. NO MEDIATES VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF)-INDUCED ANGIOGENESIS IN CORONARY VESSELS AND PROMOTES BLOOD CLOTTING THROUGH THE ACTIVATION OF PLATELETS.
-I- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADP(+).
-I- COFACTOR: HEME: BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           TISSUE SPECIFICITY: EXPRESSED CONSTITUTIVELY BY VASCULAR BENDYHELLUM. DETECTED IN ALVEOLAR AND SEROSAL EPITHELIAL CELLS AS WELL AS IN ENDOTHELIAL CELLS IN ONE DAY OLD RAT. IN ADULT LUNG, DETECTED IN RENDOTHELIAL CELLS.

DETECTED IN RATGE: DETECTED AT HIGH LEVELS IN LUNG DURING THE LATE FETAL AND POSTNATAL PERIOD AND AT LOWER LEVELS IN ADULT. SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                         'Downregulation of endothelial nitric oxide synthase (NOS III) in rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TRAIN-SPRAGUE-DAWLEY, TESUBE-Lung, MEDLINE-9525090; PubMed-7537461; Kawai N., Bloch D.B., Filippov G., Rabkina D., Suen H.C., Losty P.D., Janssens S.P., Zapol W.M., de la Monte S., Bloch K.D.; "Constitutive endothelial nitric oxide synthase gene expression is
                                                                                                                                                                                     Rattus norvegicus (Rat).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minchenko A.G., Armstead V.E., Opentanova I.L., Lefer A.M.; "Endchhelin-1, endcthelin receptors and ecNOS mRNA expression in vital organs during traumatic shock in rats "; submitted (SEP-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                     Toporsian M., Govindaraju K., Nagi M., Eidelman D., Thibault G.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Kone B.C.; "Differential expression and induction of mRNAs encoding two inducible nitric oxide synthases in rat kidney."; Kidney Int. 46:653-665(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mohaupt M.G., Elzie J.L., Ahn K.Y., Clapp W.L., Wilcox C.S.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       'Cloning and expression of the rat endothelial nitric oxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENZYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Submitted (SEP-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                 aorta following in-vivo hypoxia.";
Submitted (AUG-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                       [2]
SEQUENCE OF 288-487 AND 678-919 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SUBUNIT: HOMODIMER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 742-859 FROM N.A. STRAIN-SPRAGUE-DAWLEY; TISSUE-Lung;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-SPRAGUE-DAWLEY;
MEDLINE-95089280; Pubmed-7527874;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Seidel B., Jiang L., Wolf G.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE OF 448-677 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SEQUENCE OF 745-807 FROM N.A.
                                                                                                                                                                                                                                                                                          SEQUENCE OF 1-287 FROM N.A.
                                                                                                                                                                                                                                                                                                                  STRAIN-SPRAGUE-DAWLEY;
                                                                                                                                                                                                                                                    NCBI_TaxID=10116;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                TISSUE-Brain;
                                                                                                                                             (FRAGMENTS).
                                                                                                                                                                                                                                                                                                                                                        Ward M.E.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  THE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ÷
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ---
```

:

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@1sb-sib.ch).
                         SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ó,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   MEDITER 89291834; PubMed=2544578; Ruettinger R.T., Wen L.-P., Fulco A.J.; Ruettinger R.T., Wen L.-P., Fulco A.J.; Coding nucleotide, 5' regulatory, and deduced amino acid sequences of P-450BM-3, a single peptide cytochrome P-450:NADPH-P-450 Teductase from Bacillus megaterium.; J. Biol. Chem. 264:10987-10995(1989).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Oxidoreductase, NADP; FAD; FMN; Calmodulin-binding; Myristate;
Lipoprotein; Palmitate; Calcium-binding; Heme; Zinc; Metal-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
MYRISTAME (BY SIMILARITY).
PALMITATE (BY SIMILARITY).
PALMITATE (BY SIMILARITY).
ZINC (BY SIMILARITY).
ZINC (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               01-APR-1990 (Rel. 14, Last sequence update)
01-0C-2000 (Rel. 40, Last annotation update)
01-0C-2000 (Rel. 40, Last annotation update)
BIFUNCTIONAL P-450:MADPH-P450 REDUCTASE (CYTOCHROME P450(BM-3))
(P450BM-3) [INCLUDES: CYTOCHROME P450 102 (EC 1.14.14.1); NADPH-CYTOCHROME P450 REDUCTASE (EC 1.6.2.4)].
CYTOCHROME P450 REDUCTASE (EC 1.6.2.4)].
Bacillus megaterium.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CALMODULIN-BINDING (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 919
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MW; BF2EAC391C86650F CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       BY SIMILARITY.
HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Firmicutes; Bacillus/Clostridium group;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 51; DB 1;
Pred. No. 0.69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT; 1048 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pred. No. 0.69
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Bacillus/Staphylococcus group; Bacillus
                                                                                                                                                                                                                                                                                       U02534; AAA96141.1; -. AJ011116; CAA09494.1; -. AF093837; AAC64178.1; -.
                                                                                                                                                                                                                                        EMBL; AF085195; AAC34677.1; -. EMBL; AJ011115; CAA09493.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR003097; -. Pfam; PF00667; FAD_binding; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-APR-1990 (Rel. 14, Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRINTS; PR00369; FLAVODOXÍN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                52.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    101404
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             768 MTLVFGCRCSQLDHLYR 784
                                                                                                                                                                                                                                                                                                                                                                         U18336; AAC52188.1;
P29477; INOC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 MTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 52.6
Best Local Similarity 58.8
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0
182
288
324
494
618
678
678
849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    919 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         287
304
463
607
677
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             NCBI_TaxID=1404;
                                                                                                                                                                                                                                                                                                                                                                                                          HSSP; P29477
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CPXB_BACME
P14779:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NON_CONS
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    INIT_MET
BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NON_CONS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NP_BIND
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       LIPID
                                                                                                                                                                                                                                                                                                EMBL;
                                                                                                                                                                                                                                                                                                                                                                              EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CPXB_BACME
                                                                                                                                                                                                                                                                                                                                                     EMBL;
                           This
à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ID DATE OF THE STANDARD OF THE
```

```
4 LVFGSRRPDEDHIYQ 18
                                              241
245
248
248
297
309
310
334
341
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE
   DOMAIN
DOMAIN
BINDING
TURN
TURN
HELIX
HELIX
                                                                                                                    TURN
STRAND
HELIX
TURN
TURN
HELIX
TURN
HELIX
TURN
HELIX
TURN
HELIX
TURN
HELIX
TURN
HELIX
TURN
HELIX
TURN
HELIX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STRAND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FURN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Matches
    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                    complex.";
proc. Natl. Acad. Sci. U.S.A. 96:1863-1868(1999).
Proc. Natl. Acad. Sci. U.S.A. 96:1863-1868(1999).

-I- FUNCTION: FUNCTIONS AS A FATTY ACID MONOXYGENASE CATALYSES
HYDROXYLATION OF MEDIUM AND LONG-CHAIN FATTY ACIDS AT OMEGA-1,
OMEGA-2 AND OMEGA-3 POSITICIONS, WITH OPPIMMY CHAIN LENGTHS OF 14-16
CARBONS (LAURIC, MYRASTIC, AND PALMITIC ACIDS). THE REDUCTASE
DOMAIN IS REQUIRED FOR ELECTRON TRANSFER FROM NADP TO CYTOCHROME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  R InterPro; IPR001433; -.

R InterPro; IPR001433; -.

R InterPro; IPR001409; -.

R InterPro; IPR002402; -.

R InterPro; IPR00509; -.

R Pfam; PF00167; PAD_binding; 1.

R Pfam; PF00175; oxidored_fad; 1.

R PRINTS; PR00371; FPNCR.

R PRINTS; PR00464; EP450II.

R PRINTS; PR0076464; EP450II.

R PRINTS; PR0076464; EP450II.

R PRINTS; PR00766; CYTOCHROME_P450; 1.

R Multifunctional enzyme; FMN; FAD; Flavoprotein; 3D-structure; NADP.

I INIT_MET
                                                                                                                                                                                         "Crystal structure of hemoprotein domain of P450BM-3, a prototype for microsomal P450's."; Science 261:731-736(1993).
                                                                                                                                                                                                                                                  X-RAY CRYSTALLOGRAPHY (2.7 ANGSTROMS) OF 1-471.
MEDLINE=97185914; PubMed=9033595;
Li H Y., Poulos T.L.;
"The structure of the cytochrome p450BM-3 haem domain complexed with the fatty acid substrate, palmitcheic acid.";
Nat. Struct. Biol. 4:140-146(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       2 FERROCYTOCHROME.
-1- COFACTOR: BINDS ONE MOLE BACH OF FAD AND FWN.
-1- SIMILARITY: IN THE N-TERMINAL SECTION; BELONGS TO THE CYTOCHROME P450 FAMILY.
                                                                     "Fatty acid monooxygenation by P450BM-3: product identification and proposed mechanisms for the sequential hydroxylation reactions."; Arch. Blochem. Blophys. 292:20-28(1992).
                                                                                                                                 X-RAY CRYSTALLOGRAPHY (2.0 ANGSTROMS) OF 1-471.
MEDLINE-93342510; PubMed-8342039;
Rayichandran K.G., Boddupalli S.S., Hasemann C.A., Peterson J.A.,
                           MEDLINE-92088245; PubMed-1727637;
Boddupalli S.S., Pramanik B.C., Slaughter C.A., Estabrook R.W.,
                                                                                                                                                                                                                                                                                                                                                       X-RAY CRYSTALLOGRAPHY (2.03 ANGSTROMS).
MEDLINE-99162523; PubMed-10051560;
Sevrioukova I.F., Li H., Zhang H., Peterson J.A., Poulos T.L.;
"Structure of a cytochrome P450-redox partner electron-transfer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       CATALYTIC ACTIVITY: NADPH + 2 FERRICYTOCHROME = NADP(+) +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; J04832; AAA87602.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PIR, A34286; A34286.
PDB; 2HPD; 31-OCT-93.
PDB; 2HPD; 31-JUL-94.
PDB; 1FAG; 12-FEB-97.
PDB; 1FAH; 12-FEB-97.
PDB; 1BVY; 23-SEP-98.
PDB; 1BVY; 23-FEB-99.
InterPro; IPRO01128; -.
[2]
CHARACTERIZATION.
                                                                                                                                                                            Deisenhofer J.;
                                                            Peterson J.A.
RRARAR RR
```

```
FT DOMAIN 472 1048 ADDRESS.

FT HELLY 12 134 BHE--P-150 REDOCTASE.

FT HELLY 17 12 13 BHE--P-150 REDOCTASE.

FT STRAND 47 40 400 BHE--P-150 REDOCTASE.

FT STRAND 47 44 46

FT TURN 51 52 56

FT HELLY 71 51 51

FT HELLY 71 51

FT HELLY 71 51 51

FT HELLY 71 51

FT HELLY
```

```
Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Myristate;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
MEDLINE⇔92354731; PubMed∵1379542;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FEBS Lett. 307:287-293(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                 52.6%;
58.8%;
                                                                                                                                                                                                                                                                                                                                                     132748
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1040 MTLVFGCRCSQLDHLYR 1056
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 MTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match 52.6
Best Local Similarity 58.8
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
TISSUE-Umbilical vein;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens (Human).
                                                                                                                                                                                                                                                                                                                                                     1201 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oxide synthase."
                                                                              182
489
647
791
933
1008
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NCBI_TaxID-9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Janssens
J. Biol.
                                                                                                                                                                                                                                                                                                                                                       SEQUENCE
                                                                                                    DOMAIN
NP_BIND
NP_BIND
NP_BIND
NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ERRATUM.
                                                                                                                                                                                                                                               LIPID
                                                                                                                                                                                                                                                                                         METAL
                                                                                                                                                                                                                                                                                                               METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         NOS3_HUMAN
  à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its muse by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to licenseeisb-sib.ch).
            RESULT 14

NOS3_MOUSE

ID NOS3_MOUSE

STANDARD; PRT; 1201 AA.

AC P70313; 055056;

DT 30-MAY-2000 (Rel. 39, Created)

DT 30-MAY-2000 (Rel. 39, Last sequence update)

DT 30-MAY-2000 (Rel. 39, Last annotation update)

DT 30-MAY-2000 (Rel. 39, Last annotation update)

DF 30-MAY-2000 (Rel. 39, Last annotation update)

DF 310-MAY-2000 (Rel. 39, Last annotation update)

DF 310-MAY-2000 (Rel. 39, Created)

DF 111 (NOSILI) (RNDOTHELIAL NOS) (RNOS) (ROS) (CNOS).

GN NOS3 OR ECNOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gregg A.R., Schauer A., Shi O., Liu Z., Lee C.L., O'Brien W.E.; "Limb reduction defects in endothelial nitric oxide synthase deficient
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        FUNCTION.

MEDILMES98061722; PubMed-9843834;

Gregg A.R., Schauer A., Shi O., Liu Z., Lee C.G.L., O'Brien W.E.;

"Limb reduction defects in endothelial nitric oxide synthase-deficient
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MICE.";
Am. J. Physiol. 275:H2319-H2324(1998)

-I Physiol. 275:H2319-H2324(1998)

-I Physiol. 275:H2319-H2324(1998)

-I PUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS IMPLICATED IN VASCULAR SMOOTH MUSCLE RELAXATION THROUGH A CGMP-MEDIATED SIGNAL TRANSDUCTION PATHWAY. NO MEDIATES VASCULAR ENDOTHELIAL GROWTH FACATOR (VESE). INCORONRY VESSELS AND PROMOTES BLOOD CLOTTING THROUGH THE ACTIVATION OF PLATELETS. MAY PLAY A SIGNIFICANT ROLE IN NORMAL AND ABNORMAL LIMB DEVELOPMENT.

-I CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) UCITRULLINE + NITRIC OXIDE + N NADP(+).

-I COPACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                 IISSUE-Fetal heart;
MEDLINE-96350460; PubMed-8764825;
Gnanapandithen K., Chen Z., Kau C.-L., Gorczynski R.M., Marsden P.A.;
"Cloning and characterization of murine endothelial constitutive
nitric oxide synthase.";
                                                                                                                                                                                                                                               Eukaryota, Metazoa, Chordata, Craniata, Vertebrata, Euteleostomi, Mammalia, Eutheria, Rodentia, Sciurognathi, Muridae, Murinae, Mus
NCBI_TaxID>10090,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ENZYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               mice."; Submitted (JAN-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -!- SUBUNIT: HÖMODIMER (BY SIMILARITY).
-!- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                       Biochim. Biophys. Acta 1308:103-106(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Interpro; IPR003097; -.
Pfam: PF00175; oxidored_fad; 1.
Pfam: PF00667; FAD_binding; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL; U53142; AAC52766.1; -. EMBL; AF045940; AAC02553.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 1-53 FROM N.A. TISSUE-Fetal heart;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HSSP; P29477; 2NOS.
MGD; MGI:97362; NOS3.
InterPro; IPR001094; ...
InterPro; IPR001109; ...
InterPro; IPR001109; ...
                                                                                                                                                                                                                           Mus musculus (Mouse)
                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THE ENZYME,
```

```
NOS3_HUMAN STANDARD; PRT; 1202 AA.
P29474, Q14251, Q14443, Q13662;
01-APR-1993 (Rel. 25, Created)
01-JUL-1993 (Rel. 26, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRC-OXIDE SYNTHASE, ENDOTHEIAL (EC 1.14.13.39) (EC-NOS) (NOS, TYPE)
111) (NOSIII) (ENDOTHEIAL NOS) (ENOS) (CONSTITUTIVE NOS) (CNOS).
                                                                                                                                                                                         FMN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
MYRISTATE (BY SIMILARITY).
PALMITATE (BY SIMILARITY).
ZINC (BY SIMILARITY).
ZINC (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A. MEDITNE=92340475; PubMed=1378832; MEDLINE=92340475; PubMed=1378832; Janssens S.P., Shimouchi A., Quertermous T., Bloch D.B., Bloch K.D.; Janssens S.P., Shrimouchi A., Quertermous T., Bloch D.B., Bloch K.D.; Tcloniang and expression of a cDNA encoding human endothellum-derived relaxing factor/nitric oxide synthase."; J. Biol. Chem. 267:14519-14522(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   S.P., Shimouchi A., Quertermous T., Bloch D.B., Bloch K.D.;
Chem. 267:22694-22694(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Marsden P.A., Schappert K.T., Chen H.S., Flowers M., Sundell C.L., Wilcox J.N., Lamas S., Michel T., "Molecular cloning and characterization of human endothelial nitric
Lipoprotein; Palmitate; Calcium-binding; Heme; Zinc; Metal-binding; Multigene family.

INIT_MET 0 BY SIMILARITY.

BINDING 182 182 HEME (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Marsden P.A., Heng H.H., Scherer S.W., Stewart R.J., Hall A.V., Shi X.M., Tsui L.C., Schappert K.T.; Shi X.M., Tsui L.C., Schappert K.T.; Structure and chromosomal localization of the human constitutive endothelial nitric oxide synthase gene."; J. Biol. Chem. 268:17478-17488(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                    BY SIMILARITY.
HEME (BY SIMILARITY).
CALMODULIN-BINDING (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 51; DB 1; Length 1201; Pred. No. 0.92; 2; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 DA37ABAC947DABD5 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  .
Ч
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-93352539; PubMed-7688726;
```

13

```
(See http://www.isb-sib.ch/announce/
   and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      HEME (BY SIMILARITY).
CALMODULIN-BINDING (POTENTIAL).
FAN (PYRINDINE PART) (BY SIMILARITY).
FAD (FADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (ARD PART) (BY SIMILARITY).
NADP (ARD PART) (BY SIMILARITY).
NARISTATE (BY SIMILARITY).
PALMITATE (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Oxidoreductase, NADP; FAD; FMN; Calmodulin-binding; Myristate, Lipoprotein; Palmitate; Disease mutation; Calcium-binding; Heme; Zinc; Metal-binding; Multigene family; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               E -> D (IN CORONARY SPASM).
/FIId=VAR_008037.
S -> R (IN REF. 8).
G -> S (IN REF. 9).
   Usage by
modified and this statement is not removed. entities requires a license agreement (See or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAA36365.1; JOINED.
AAA36365.1; JOINED.
AAA36365.1; JOINED.
AAA36365.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ZINC
                                                                                                                                                                                                                                     JOINED.
                                                                                                                                                                                                                                                                    JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                            JOINED.
                                                                                                                                          AAA36365.1; JOINED.
AAA36365.1; JOINED.
AAA36365.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           JOINED
                                                                                                                                                                                                                                                                                                                                                                                                CAA53950.1; JOINED
                                                                                                                                                                                                                                                                                                                                                                                                               JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                               JOINED
                                                                                                                                                                                         AAA36365.1; JOINED
                                                                                                                                                                                                      JOINED
                                                                                                                                                                                                                        JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
                                                                                                                                                                                                                                                      AAA36365.1; J
AAA36365.1; J
AAA36365.1; J
                                                               EMBL; M93718; AAA36364.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CAA53950.1
                                                                                                                                                                                                                                                                                                                                                                                                                                            CAA53950.1
CAA53950.1
                                                                                                                                                                                                                                                                                                                                                                 AAA36374.1
                                                                                                                                                                                                                                                                                                                                                                                CAA53950.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              InterPro; IPR001094; -. InterPro; IPR001433; -. InterPro; IPR001709; -.
                                                                                                                                                                                                                                                                                                                                                                                                               CAA53950.
                                                                                                                                                                                                                                     AAA36365.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        183
509
679
803
944
1027
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               52
488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  14
25
93
98
297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               InterPro; IPR003097; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PIR; S24052; S24052.
PIR; A42867; A42867.
PDB; 3NOS; 04-FEB-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              52
488
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 25
93
98
297
                                                                                                                                                                                                                                                                                                                                                                                                                                            x76307;
x76308;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X76309;
X76310;
                                                                                                                                                         L10696;
L10697;
                                                                                                                                                                                        L10698;
L10699;
                                                                                                                                                                                                                                     L10701;
L10702;
                                                                                                                                                                                                                                                                                                                    L10706;
L10707;
                                                                                                                                                                                                                                                                                                                                                                 L26914;
X76303;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            X76311;
                                                                                                                             L10694;
                                                                                                                                            L10695;
                                                                                                                                                                                                                                                                                                                                                 L10708;
                                                                                                                                                                                                                                                                                                                                                                                                                 X76305;
                                                                                                                                                                                                                                                                                      L10704;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 MIM; 163729;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        INIT_MET
BINDING
DOMAIN
NP_BIND
NP_BIND
NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL;
EMBL;
                                                                                                                                                         EMBL;
                                                                                                                                                                                        EMBL;
EMBL;
                                                                                                                                                                                                                       EMBL;
EMBL;
                                                                                                                                                                                                                                                      EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                  EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    LIPID
LIPID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   METAL
METAL
                                                                                                                                                                                                                                                                                                   EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBL;
                                                                                                              EMBL;
                                                                                                                             EMBL;
                                                                                                                                             EMBL;
                                                                                                                                                                         EMBL;
                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
                                                                                                                                                                                                                                                                                     EMBL;
   This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           "A missense Glu298Asp variant in the endothelial nitric oxide synthase gene is associated with coronary spasm in the Japanese.";
Hum. Genet. 103:65-69(1998).

-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS IMPLICATED IN VASCULAR SMOOTH MUSCLE RELAXATION THROUGH A CGMP-MEDIATED SIGNAL TRANSDUCTION PATHWAY. NO MEDIATES VASCULAR ENDOTHELIAL GROWTH FACTOR (VEGF)-INDUCED ANGIOGENESIS IN CORONARY VESSELS AND PROMOTES BLOOD CLOTTING THROUGH THE ACTIVATION OF PLATELETS.
-!- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sase K., Michel T.;
"Expression of constitutive endothelial nitric oxide synthase in human
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     NITRIC OXIDE + N NADP(+).
COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FWN. ALSO REQUIRES
TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-98407797; PubMed-9737779;
Yoshimura M., Yasue H., Nakayama M., Shimasaki Y., Sumida H.,
Sugiyama S., Kugiyama K., Ogawa H., Ogawa Y., Saito Y., Miyamoto Y.,
                                                                                           Nadaud S.A., Bonnardeaux A., Lathrop M., Soubrier F., "Gene structure, polymorphism and mapping of the human endothelial nitric oxide synthase gene.";
                                                                                                                                                                    SEQUENCE FROM N.A.

MEDLINE-9433373; PubMed=7519987;

Miyahara K., Kawamoto T., Sase K., Yui Y., Toda K., Yang L.X.,

Hattori R., Aoyama T., Yamamoto Y., Doi Y., Ogoshi S.,

Hashimoto K., Kawai C., Sasayama S., Shizuta Y.;

Cloning and structural characterization of the human endothelial

nitric-oxide-synthase gene.;

Eur. J. Biochem. 223:719-726(1994).
                                                                                                                                                                                                                                                                                                                                                                Robinson L.J., Weremowicz S., Morton C.C., Michel T.; "Isolation and chromosomal localization of the human endothelial nitric oxide synthase (MoS3) gene."; Genomics 19:350-357(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-99173237; PubMed-10074942;
Fischmann T.O., Hruza A., Niu X.D., Fossetta J.D., Lunn C.A.,
Dolphin E., Prongay A.J., Reichert P., Lundell D.J., Narula S.K.
Weber P.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Structural characterization of nitric oxide synthase isoforms reveals striking active-site conservation.";
Nat. Struct. Biol. 6:233-242(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -1- TISSUE SPECIFICITY: PLATELETS.
-1- DISEASE: DEFECTS IN NOS3 ARE INVOLVED IN CORONARY SPASM.
-1- SIMILARITY: BELONGS TO THE NOS FAMILY.
   Liao J.K.;
Submitted (DEC-1993) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       -! - ENZYME REGULATION: STIMULATED BY CALCIUM/CALMODULIN.
                                                                                                                                          Biochem. Biophys. Res. Commun. 198:1027-1033(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      [10]
X-RAY CRYSTALLOGRAPHY (2.4 ANGSTROMS).
                                                                                                                                                                                                                                                                                                                                  TISSUE=Placenta;
MEDLINE-94245207; PubMed=7514568;
                                                                                                                                                                                                                                                                                                                                                                                                                                                             TISSUE=Platelet;
MEDLINE=96077182; Pubmed=7475956;
                                                                              MEDLINE=94161710; PubMed=7509596;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 VARIANT CORONARY SPASM ASP-297
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       blood platelets.";
Life Sci. 57:2049-2055(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE OF 410-527 FROM N.A.
                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 1-52 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SUBUNIT: HOMODIMER.
                                                SEQUENCE FROM N.A.
                                                               FISSUE=Placenta;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          THE ENZYME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nakao K.;
```

```
566 566 V -> W (IN REF. 6).
1149 1149 R -> RQ (IN REF. 7).
1193 1193 D -> E (IN REF. 6).
1202 AA; 133157 WW; 93D127D6C14AC92E CRC64;
 CONFLICT
CONFLICT
CONFLICT
SEQUENCE
 FFFS
```

; 0 Gaps ó Query Match 52.6%; Score 51; DB 1; Length 1202; Best Local Similarity 58.8%; Pred. No. 0.92; Matches 10; Conservative 2; Mismatches 5; Indels

Search completed: September 10, 2001, 14:09:54 Job time: 563 sec

```
version 4.5
- 2000 Compugen Ltd.
 GenCore
Copyright (c) 1993
```

OM protein - protein search, using sw model

September 10, 2001, 14:01:15 Run on:

; Search time 42.28 Seconds
(without alignments)
32.430 Million cell updates/sec

1 RMTLVFGSRRPDEDHIYQ 18 US-08-833-506C-31 97 Perfect score: Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

219241 Total number of hits satisfying chosen parameters:

219241 seqs, 76174552 residues

Searched:

length: 0 length: 2000000000 Minimum DB seq Maximum DB seq

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

PIR_68:*
1: pir1:*
2: pir2:*
3: pir3:*
4: pir4:*

Database

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

																										•				
	Description	nitric-oxide synth	nitric-oxide synth	nitric-oxide synth		nitric-oxide synth				nitric-oxide synth			nitric-oxide synth	nitric-oxide synth	cytochrome P450 /	nitric-oxide synth	cytochrome P450 BM						nitric-oxide synth	NADPHferrihemopr	NADPHferrihemopr	NADPHferrihemopr	NADPHferrihemopr	. NADPH ferrihemopr	NADPH ferrihemopr	hypothetical prote
SUMMARIES	ID	A49676	146074	S47647	I56575	S38253	I53165	JC5029	S65440	A43271	JC5027	JC5028	138067	I39204	A69975	151917	A34286	S71424	A47501	A38943	JN0609	S16233	G01946	RDPGO4	A60557	RDRTO4	715	5659	S38427	3193
	60	7	7	Н	H	Н	Н	7	7	Н	~	7	7	~	Н	7	Н	7	Н		N	7	7	Н	7	Н	7	7	Н	7
	Query Match Length	1153	136	1147	1147	1147	1147	1147	1147	1144	1147	1147	49	69	1054	63	1049	1202	1203	1205	1429	1429	1433	677	677	678	678	671	693	366
d	Query							83.5		٠.							52.6												47.4	46.4
	Score	92	81	81	81	81	81	81	81	77	69	69	99	59	52	51	51	51	51	51	51	51	51	49	49	49	49	48	46	45
	Result No.	1	7	m	4	2	9	7	80	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	. 27	28	59

probable membrane hypothetical prote	transcription/repa	oligopeptide ABC t conserved hypothet	probable dTDP-gluc	cuticie protein cu hypothetical prote	hypothetical prote	ribonucleoside-dip	hypothetical prote	hypothetical prote	probable regulator	NADPHferrihemopr	hypothetical prote	peptidase PAB1418
S54072 S60064	164112	F83909 D86851	H72588	A49//2 T20032	F75633	WMBEP5	B84341	T49165	T36626	A25505	C85079	E75057
0,0	. .	77	~ (7 7	~	-	~	C3	~	~	~	7
623	1146	244 314	330	424	161	305	311	413	422	619	1428	632
46.4	44.3	43.3	43.3	43.3	42.3	42.3	42.3	42.3	42.3	42.3	42.3	41.8
4 5 4 3	43	4 4	4.2	4 4	41	41	41	41	41	41	41	40.5
30	32	3.4 4.4	35	37	38	39	40	41	42	43	44	45

ALIGNMENTS

929							
ric-oxide	synthase	EC :	ric-oxide synthase (EC 1.14.13.39),	<u>`</u>	inducible	•	hume
pecies: He	pecies: Homo sapiens	nem) s	an)				

RESULT 1
A49676
nitric-oxide synthase (EC 1.14.13.39), inducible - human
C;Species: Homo sapiens (man)
C;Date: 16-Feb-1996 #sequence_revision 16-Feb-1996 #text_change 20-Jun-2000
C;Accession: A49676; JX0345; G01947; 138933; S47566; A47475
R;Charles: 1.G.; Palmer, R. M.; Hickery, M.S.; Bayliss, M.T.; Chubb, A.P.; Hall, V.S.; Proc. Natl. Acad. Sci. U.S.A. 90, 11419-11423, 1993
A;Title: Cloning, characterization, and expression of a cDNA encoding an inducible nl A;Reference number: A49676; MUID:94068614
A;Accession: A49676
A;Status: preliminary
A;Molecule type: mRNA
A;Molecule type: mRNA
A;Residues: 1-1153 ARB2.
A;Cross-references: EMBL:X73029; NID:9441452; PIDN:CAA51512.1; PID:9441453
B;Hokari, A.; Zeniya, M.; Bsumi, H.
J. Biochem. 116, 575-581, 1994
A;Title: Cloning and functional expression of human inducible nitric oxide synthase (A;Reference number: JX0345; MUID:95153267

A; Modecule type: mRNA
A; Residues: 1-607, 'L', 609-1153 <HOK>
A; Cross-references: DDBJ:D26525; NID:9559326; PIDN:BAA05531.1; PID:g1228940
A; Residues: 1-607, 'Kishna, G.
B; Park, C.; Park, R.; Krishna, G.
R; Park, C.; Park, R.; Krishna, G.
A; Reference number: G08912
A; Reference number: G08912
A; Accession: G1947
A; Status: translatated from GB/EMBL/DDBJ
A; Modecule type: mRNA
A; Residues: 1-607, 'L', 609-1153 <PAR>
A; Residues: 1-607, 'L', 609-1153 <PAR>
A; Residues: 1-607, 'L', 609-1153 <PAR>
A; Residues: EMBL: 03153 <PAR>
A; Cross-references: EMBL: 03151 <PAR>
A; Residues: 1-607, 'L', 609-1153 <PARP
A; Resid

A; Molecule type: mRNA A; Residues: 1-675, 1', 677-932, 'G', 934-965, A', 967-1153 <RE2> A; Residues: BBL: U20141; NID: 9687680; PIDN: ABB60366.1; PID: 9687681 B; Maier, R.; Bilbe, G.; Rediske, J.; Lotz, M. Biochim. Biophys. Acta 1208, 145-150, 1994 A; Title: Inducible nitric oxide synthase from human articular chondrocytes: cDNA clon A; Reference number: \$47566; MUID: 94368816

A; Status: preliminary; nucleic acid sequence not shown

A; Molecule type: mRNA A; Molecule type: mRNA A; Residues: 1-22, (2, 24-153, L', 155-176, V', 178-799, 'A', 801-912, 'P', 914-1153 <MAI> A; Cross-references: EMBL: UO5810; NID:9452487; PIDN:AAA56666.1; PID:9452488 B; Geller, D.A.; Lowenstein, C.J.; Shapiro, R.A.; Nussler, A.K.; DI Silvio, M.; Wang, Proc. Natl. Acad. Sci. U.S.A. 90, 3491-3495, 1993

Wed

```
Kicheny, 1:; Aimquist, N.; Mangalst, N.; Multip. M
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 81; DB 1; Le
Pred. No. 1.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83.5%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       83.5%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1006 RMTLVFGCRHPEEDHLYQ 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1006 RMTLVFGCRHPEEDHLYQ 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Ouery Match
Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ß
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       QQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ŏ
                                                                                                                                                                                                     A Residues: 1-422, 'I',424-804,'D',806-830,'SP',833-932,'G',934-965,'A',967-986,'V',988-1
A FResidues: 1-422,'I',424-804,'D',806-830,'SP',833-932,'G',934-965,'A',967-986,'V',988-1
A FROSSTREGERENCES: GBEIL09210; NID:9292241; PIDN:AAA39171.1; PID:9292242
A FX PROST FREE FROM SET LOS A FROM SET FROM S
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  nitric-oxide synthase (EC 1.14.13.39) II - bovine (fragment)
C; Species: Bos primigenius taurus (cattle)
C; Species: Bos primigenius taurus (cattle)
C; Species: Bos primigenius taurus (cattle)
C; Accession: I66074
R; Bloch, K.D.; Wolfram, J.R.; Brown, D.M.; Roberts, J.D.
Genomics 27, 526-530, 1995
A; Title: Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, and NC A; Reference number: A57622; MUID:96047340
A; Reference number: A5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Z
A;Title: Molecular cloning and expression of inducible nitric oxide synthase from human A;Reference number: A47475; MUID:93234523
A;Accession: A47475
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reduc
Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; NADP;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          S47647
nitric-oxide synthase (EC 1.14.13.39) - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 16-Jun-2000
C;Accession: S47647; JC1472
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 92; DB 2; Length 1153;
Pred. No. 1.3e-07;
0; Mismatches 1; Indels
                                                                                                                                                                              translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         83.5%; Score 81; DB 2; Length 136; 82.4%; Pred. No. 9.8e-07; ive 2; Mismatches 1; Indels
                                                                                                                                                                              Status: preliminary; not compared with conceptual
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    94.8%;
94.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1009 RMTLVFGCRRPDEDHIYO 1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 RMTLVFGSRRPDEDHIY 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     23 RMTLVFGCRRPEEDHLY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
nes 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             원
```

Length 1147;

```
C; Species: Rattus norvegicus (Norway rat)
C; Date: 05-May-2000 fsequence_revision 05-May-2000 ftext_change 05-May-2000
C; Accession: 156575
R; Galea, E.; Reis, D.J.; Feinstein, D.L.
J Neurosci. Res. 37, 406-444, 1994
A; Tille: Cloning and expression of inducible nitric oxide synthase from rat astrocyte
A; Reference number: 156575; MUID: 94231594
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  $38253
nitric-oxide synthase (EC 1.14.13.39) - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 16-Jun-2000
C;Accession: S38253; JN0457
R;Adachi, H.; Hida, S.; Oquenti, S.; Ohshima, H.; Suzuki, H.; Nagasaki, K.; Kawasaki,
Eur. J. Biochem. 217, 37-43, 1993
A;Title: Molecular cloning of a cDNA encoding an inducible calmodulin-dependent nitri
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  re
Be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A Accession: 156575
A Status: translated from GB/EMBL/DDBJ
A Status: translated from GB/EMBL/DDBJ
A MAOLecule type: mRNA
A MAOLecule type: mRNA
A Residues: 1-1147 <RES>
A Cross-references: EMBL:003699; NID:9430718; PIDN:AAC13747.1; PID:9430719
C Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein
C Steywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; FF;536-1124/Domain: MADPH--ferrihemoprotein reductase homology KFEH>
F;538-674/Domain: flavodoxin homology (FLX>
F;538-674/Domain: flavodoxin homology (AFLX>
F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
·
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1147;
Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                                nitric-oxide synthase (EC 1.14.13.39) [similarity] - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1.1e-05;
ches 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 81; DB 1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Pred. No. 1.16
2; Mismatches
```

re ae

ö

```
C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C;Accession: JC5029
R;Tsutsumishita, Y:; Kawai, Y:; Takahara, H.; Onda, T.; Miyoshi, J.; Futaki, S.; Niwa Biol. Pharm. Bull. 19, 1374-1376, 1996
A;Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, an A;Reference number: JC5027; MUID:97070590
A;Accession: JC5029
A;Accession: JC5029
A;Accession: JC5029
A;Accession: JC5029
A;Accession: JC5029
A;Accession: JC5029
A;Reference number: Argument and A;Molecule Lype: MRNA
A;Residues: 1-1147 <TSU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   R; Iwashina, M.; Hirata, Y.; Imai, T.; Sato, K.; Marumo, F.

Eur. J. Biochem. 237, 668-673, 1996
A; Title: Molecular cloning of endothelial, inducible nitric oxide synthase gene from A; Reference number: S65440; MUID:96235231
A; Accession: S6540
A; Status: not compared with conceptual translation
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   nitric-oxide synthase (EC 1.14.13.39), calmodulin-independent - mouse C;Species: Mus musculus (house mouse) C;Species: Mus musculus (house mouse) C;Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 03-Mar-2000 C;Accession: A43271; A42166; UN0458; A46186 R;Xie, Q.; Cho, H.J.; Calaycay, J.; Mumford, R.A.; Swiderek, K.M.; Lee, T.D.; Ding,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               A Experimental source: uterus
C;Comment: This protein synthesizes nitric oxide from L-arginine.
C;Comment: This protein synthesizes nitric oxide from L-arginine.
C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein.
C;Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; IF;536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;536-1124/Domain: flavodoxin homology <FLX>
F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Residues: 1-1147 < FWA>
C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein; FAD; flavoprotein; FMN; heme; iron; IF; 506-535/Region: calmodulin binding F; 536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>-F; 538-674/Domain: NADPH--ferrihemoprotein reductase homology <FEH>-F; 538-674/Domain: flavodoxin homology <FIX>-F; 538-674/Domain: flavodoxin homology <FIX>-F; 520-647/Region: FMD binding #status predicted F; 775/Region: FAD binding #status predicted F; 775/Region: FAD binding #status predicted F; 791-910/Region: FAD binding #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nitric-oxide synthase (EC 1.14.13.39) - rat
C;Species: Rattus norvegicus (Norway rat)
C:Date: 28-Oct-1996 #sequence_revision 13-Mar-1997 #text_change 04-Mar-2000
C;Accession: S65440
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             F:975-993/Region: NADPH binding #status predicted
F:1074-1087/Region: NADPH binding #status predicted
F:197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 81; DB 2; Le
Pred. No. 1.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 81; DB 2; Pred. No. 1.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           83.5%;
77.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1006 RMTLVFGCRHPEEDHLYQ 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1006 RMTLVFGCRHPEEDHLYQ 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 83.5
Best Local Similarity 77.8
Matches 14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     14;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A43271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A.Cross references: EMBL:U26686; NID:9886072; PIDN:AAA85861.1; PID:9886073
C.Genetics:
A.Gene. Total C.Genetics:
C
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Molecule type: mRNA
A; Residues: 1-41, 'SS', 44-103, 105-190, 'Q', 192-213, 'R', 215-247, 'T', 249-263, 'I', 265-373, 'IE
A; 896-1000, 'LG', 1003-1015, 'RR', 1018-1026, 'EQ', 1029-1147 <WOO>
A; Experimental source: liver
A; Experimental source: liver
A; Genetics:
A; Genetics:
C; Function:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A Description: catalyzes the oxidation of an L-arginine guanidino nitrogen and of NADPH C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reduc C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reduced S; Reyworks: calmodulin binding: chromoprotein; FAD; flavoprotein; FMN; heme; iron; metal F; 536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH> F; 536-674/Domain: flavodoxin homology <FEK> F; 538-674/Domain: flavodoxin homology <FEK> F; 197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             C; Accession: 153165
R; Karlsen, A.E.; Andersen, H.U.; Vissing, H.; Larsen, P.M.; Fey, S.J.; Cuartero, B.G.; M Diabetes 44, 753-758, 1995
A; Title: Cloning and expression of cytokine-inducible nitric oxide synthase cDNA from ra A; Reference number: 153165; MUID: 95309542
A; Accession: 153165
A; Accession: Is3165
A; Accession: Is3165
A; Molecule type: mRNA
A; Residues: 1-1147 < RES>
                                                                                                                                                                                                                                                                                                                                                                                oxid
                                                                                        A; Molecule type: mRNA
A; Residues: 1-1147 - (ADA)-
A; Cross-references: GB-D12520; NID:g391858; PIDN:BAA02090.1; PID:g391859
A; Experimental source: liver
R; Wood, E.R.; Berger Jr., H.; Sherman, P.A.; Lapetina, E.G.
Biochem. Biophys. Res. Commun. 191, 767-774, 1993
A; Title: Hepatocytes and macrophages express an identical cytokine inducible nitric A; Reference number: JN0457; MUID:9321515
A; Accession: JN0457
A; Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C;Species: Rattus norvegicus (Norway rat)
C;Date: 05-May_2000 #sequence_revision 05-May-2000 #text_change 05-May-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ;;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               83.5%; Score 81; DB 1; Length 1147; 77.8%; Pred. No. 1.1e-05; Live 2; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    synthase (EC 1.14.13.39) [similarity] - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 81; DB 1; Ler
Pred. No. 1.1e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          JC5029
nitric-oxide synthase (EC 1.14.13.39) U - rat
    A; Reference number: S38253; MUID:94039059
A; Accession: S38253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              83.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1006 RMTLVFGCRHPEEDHLYQ 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             14; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Best Local Similarity
Matches 14; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         nitric-oxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1006
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

a e

K

us-08-833-506c-31.rpr

マ

```
71.18;
72.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    71.1%;
72.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1006 RMTLVFGCRHSREDHLYQ 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1006 RMTLVFGCRHQREDHLYQ 1023
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A; Molecule type: mRNA
A; Residues: 1-1147 <TSU>
A; Experimental source: lung
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Gene: GDB: NOS2B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        13;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  δ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A. Status: preliminary: not compared with conceptual translation
A. Status: preliminary: not compared with conceptual translation
A. Molecule type: mRNA
A. Molecule type: managed to the molecule type: macrophage
A. Molecule type: managed to the molecule type: macrophage
A. Molecule sequence extracted from NCBI backbone (NCBIP:113541)
C. Genetics:
A. Molecule type: managed type: managed type: metally the molecule type: metally the metall
                                                                                                                                                                                                                                                                                  A; Residues: 1-1144 <XIE>
A; Cross-references: GB:M87039; NID:g198406; PIDN:AAA39315.1; PID:g198407
R; Lyons, C.R.; Orloff, G.J.; Cunningham, J.M.
J. Biol. Chem. 267, 6370-6374, 1992
A; Title: Molecular cloning and functional expression of an inducible nitric oxide synths
A; Reference number: A42166; MUID:92210618
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Molecule type: mRNA
A; Residues: 1-1144 <LLYO>
A; Coss-references: GB:M84373; NID:g200095; PIDN:AAA39834.1; PID:g200096
A; Cross-references: GB:M84373; NID:g200095; PIDN:AAA39834.1; PID:g200096
B; Mood, E.R.; Berger Jr., H.; Sherman, P.A.; Lapetina, E.G.
Biochem. Biophys. Res. Commun. 191, 767-774, 1993
A; Title: Hepatocytes and macrophages express an identical cytokine inducible nitric oxid
A; Reference number: JN0457; MUID:93221515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Accession: JN0458
A; Status: nucleic acid sequence not shown
A; Molecule type: mRNA
A; Molecule type: mRNA
A; Residuas: 1-278, F', 280-682, 'H', 684-937, 939-1144 <WOO>
A; Experimental source: liver
B; Lowenstein, C.J.; Glatt, C.S.; Bredt, D.S.; Snyder, S.H.
Proc. Natl. Acad. Sci. U.S.A. 89, 6711-6715, 1992
A; Title: Cloned and expressed macrophage nitric oxide synthase contrasts with the brain A; Reference number: A46186; MUID:92357701
A;Title: Cloning and characterization of inducible nitric oxide synthase from mouse macr
A;Reference number: A43271; MUID:92229444
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                nitric-oxide synthase (EC 1.14.13.39) K - rat
C.Species: Rattus norvegicus (Norway rat)
C.Species: L-Jan-1997 #sequence_revision 21-Jan-1997 #text_change 20-Jun-2000
C.Accession: JC5027
R.Tsutsumishita, Y.; Kawai, Y.; Takahara, H.; Onda, T.; Miyoshi, J.; Futaki, S.; Niwa, Biol. Pharm. Buil. 19, 1374-1376, 1996
A.Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, and A.Reference number: JC5027; MUID:97070590
A.Status: nucleic acid sequence not shown
A.Mccession: JC5027
A.Accession: JC5027
A.A
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             79.4%; Score 77; DB 1; Length 1144; 72.2%; Pred. No. 5.2e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1003 RMSLVFGCRHPEEDHLYQ 1020
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 79.4
Best Local Similarity 72.2
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Experimental source: kidney
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Status: preliminary
                                                                                                                                                                                                                                        A; Molecule type: mRNA
                                                                                                                                                                                 A;Status: preliminary
                                                                                                                          Accession: A43271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     A; Accession: A42166
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
```

```
C; Species: Rattus norvegicus (Norway rat)
C; Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C; Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C; Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C; Date: 31-Jan-1997 #sequence norganization of the sequence analysis of inducible nitric oxide synthase in rat kidney, lung, an A; Reference number: JC5027; MUID: 97070590
A; Reference number: JC5028
A; Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Comment: This protein synthesizes nitric oxide from L-arginine.

Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein re-
Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; me
536-1124/Domain: NADPH--ferrihemoprotein reductase homology KFEH>
538-674/Domain: flavodoxin homology KFLX>
                 re
B
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            re
NA
C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein C;Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; F;191-199/Domain: heme-binding #status predicted <HMB>
F;536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;536-1124/Domain: FMN binding *Etatus predicted <FMN>
F;620-647/Domain: FMN binding #status predicted <FMN>
F;74-775,899-910/Domain: FMD binding #status predicted <FMD>
F;975-993,1054-1067/Domain: NADP binding #status predicted <NDP>
F;975-993,1054-1067/Domain: NADP binding #status predicted <NDP>
F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A;Cross-references: GDB:547926; OMIM:600719
A;Map position: 17p13.1-17q25
C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein
C;Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Species: Homo sapiens (man)
C; Date: 17-May-1996 #sequence_revision 17-May-1996 #text_change 11-Jun-1999
C; Date: 17-May-1996 #sequence_revision 17-May-1996 #text_change 11-Jun-1999
C; Accession: 138067
A; Pitle: Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, A; Reference number: A57622; MUID:96047340
A; Reference number: A57622; MUID:96047340
A; Recession: 138067
A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          PID:91041687
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 69; DB 2; Length 1147; Pred. No. 0.0013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A;Molecule type: DNA
A;Residues: 1-49 <RES>
A;Cross-references: EMBL:U18333; NID:91041684; PIDN:AAC50233.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 nitric-oxide synthase (EC 1.14.13.39) IIb - human (fragment)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 69; DB 2;
Pred. No. 0.0013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nitric-oxide synthase (EC 1.14.13.39) L - rat
```

us-08-833-506c-31.rpr

```
A; Experimental source: strain 168 C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                              53.6%;
60.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            52.6%;
58.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ||||||| | | ||||| 24 MTLVFGCRCSQLDHLYR 40
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match 52.6
Best Local Similarity 58.8
Matches 10; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                2 MTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                          Query Match 53.6
Best Local Similarity 60.0
Matches 9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           937 LYFGCRRPDHDDLYR 951
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      4 LVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A; Molecule type: mRNA
A; Residues: 1-63 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Ωý
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Nycontains: Naubri-Tirlinemoprotein reductase (EC 1.0.2.4); unspecific monocxygenase (EU C; Species: Bacillus subtilis C; Date: 21-Jul-2000 #sequence_revision 21-Jul-2000 #text_change 28-Jul-2000 C; Date: 21-Jul-2000 #sequence_revision 21-Jul-2000 #text_change 28-Jul-2000 C; Rkunst, F.; Ogasawara, N.; Moszer, I.; Albertini, A.M.; Alloni, G.; Azevedo, V.; Berter C.; Bron, S.; Brouillet, S.; Bruschi, C.V.; Caldwell, B.; Capuano, V.; Carter, N.M.; Chd A.; Ehrlich, S.D.; Emmerson, P.T.; Entian, K.D.; Errington, J.; Fabret, C.; Ferrari, E. Nature 390, 249-256, 1997
A; Authors: Foulger, D.; Fritz, C.; Fujita, M.; Fujita, Y.; Fuma, S.; Galizzi, A.; Galler iech, J.; Haurodd, C.R.; Henaut, A.; Hilbert, H.; Holsappel, S.; Hosono, S.; Hullo, M.F. Koetter, P.; Koningstein, G.; Krogh, S.; Kumano, M.; Kurita, K.; Lapidus, A.; Lardinois, A; Authors: Lauber, J.; Lazarevic, V.; Lee, S.M.; Sadale, M.; Bortetelle, Rieger, M.; Rivolta, C.; Rocha, B.; Roch, M.; Sadale, Y.; Sato, T.; Scanlon, A; Authors: Schleich, S.; Schroeter, R.; Scoffone, F.; Sekjuchi, J.; Sekowska, A.; Sero, T.; Winters, P.; Vishikawa, H.F.; Zumstein, E.; Yoshikawa, H.; Danchin, A. A.; Alloni, R.; Yasamoto, H.; Yamane, P.; Vishikawa, H.; Danchin, A.; Alloni, P.; Winters, M.; Alloni, P.; Minters, P.; Minters, M.; Alloni, M.; Allo
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              nitric-oxide synthase (EC 1.14.13.39) 2C - human (fragment)
N;Alternate names: nitric oxide synthase II
C;Species: Homo sapiens (man)
C;Date: 24 May-1996 #sequence_revision 24 May-1996 #text_change 11-Jun-1999
C;Accession: I39204
R;Bloch, K.D.; Wolfram, D.M.; Roberts, J.D.
Genomics 27, 526-530, 1995
A;Title: Three members of the nitric oxide synthase II gene family (NOS2A, NOS2B, and NC A;Reference number: A57622; MUID:96047340
A;Reference number: A57622; MUID:96047340
A;Reference number: A57622; MUID:96047340
A;Residus: preliminary; translated from GB/EMBL/DDBJ
A;Residues: 1-69 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         cytochrome P450 / NADPH--ferrihemoprotein reductase yrhJ [similarity] - Bacillus subtili
N;Contains: NADPH--ferrihemoprotein reductase (EC 1.6.2.4); unspecific monooxygenase (EC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reduc
Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; NADP;
                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Cross references: EMBL:U18335; NID:g1050946; PIDN:AAC50245.1; PID:g1050948 G; Genetics: A; Genetics: CB:NOS2C A; Coross references: GDB:547943; OMIM:600720 A; Map Position: 17p13.1-17q25 A; Introns: 33/1 C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemopr C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemopr; Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme;
                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A; Cross-references: GB: 299117; GB: AL009126; NID: 92634966; PID: 92635162
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: nucleic acid sequence not shown; translation not shown
                                                                                    Length 49;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 69;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           5; Indels
                                                                                Score 66; DB 2; I
Pred. No. 0.00013;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 59; DB 2;
Pred. No. 0.003;
                                                                                                                                                                1; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Reference number: A69580; MUID: 98044033
                                                                                68.0%;
72.2%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               60.8%;
66.7%;
                                                                                                                                                                                                                                     1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                             5 RMTPVFECRSPNEDHIYQ 22
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | ||||| |||||| |:
38 RRTLVFWCRRPDEDRHYR 55
                                                                                Query Match 68.0°
Best Local Similarity 72.2°
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  -1054 <KUN>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match
Best Local Similarity
Matches 12; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Accession: A69975
                                                                                                                                                                                                                                                                                                                                                                                                                              13
                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        셤
```

```
A.Gene: yrhJ
C;Superfamily: P450 bifunctional enzyme CYP102; cytochrome P450 homology; flavodoxin
C;Superfamily: P450 bifunctional enzyme CYP102; cytochrome P450 homology; flavodoxin
C;Keywords: chromoprotein; flavoprotein; heme; iron; metalloprotein; monooxygenase; o
E;486-1050/Domain: NADPH--ferrihemoprotein
F;488-625/Domain: flavodoxin homology <FLX.
F;403/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            R R
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              G.; Rabkina, D.; Suen, H.C.; Losty, P.D.; Janssen
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C; Species: Rattus norvegicus (Norway rat)
C; Species: Rattus norvegicus (Norway rat)
C; Date: 26-Jul-1996 #sequence_revision 26-Jul-1996 #text_change ll-Jun-1999
C; Accession: I51917
R; Kawai, N.; Bloch, D.B.; Fillippov, G.; Rabkina, D.; Suen, H.C.; Losty, P.D.; Janssen A. Tritle: Constitutive endothelial nitric oxide synthase gene expression is regulated A; Reference number: I51917; MUID:95250990
A; Reference number: I51917
A; Status: preliminary; translated from GB/EMBL/DDBJ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein C;Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron;
                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              A;Cross-references: EMBL:U18336; NID:g806761; PIDN:AAC52188.1; PID:g806762 C;Genetics:
                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                          ô
                                                                                                                                                                                                                                                                                  Score 52; DB 1; Length 1054;
Pred. No. 1;
2; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Length 63;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5; Indels

    rat (fragment)

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 51; DB 2;
Pred. No. 0.067;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Search completed: September 10, 2001, 14:01:15 Job time: 214 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nitric-oxide synthase (EC 1.14.13.39) 3
```

This Page Blank (uspio)

```
82
   12
                                                                                                                                                                                                                        ; Search time 67.08 Seconds
(without alignments)
16.268 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A. SIDSB / Goddata/geneseq/geneseqp/AA1980.DAT:*
| SIDSB / Goddata/geneseq/geneseqp/AA1981.DAT:*
| SIDSB / Goddata/geneseq/geneseqp/AA1991.DAT:*
| SIDSB / Goddata/geneseq/geneseqgp/AA1991.DAT:*
| SIDSB / Goddata/geneseq/geneseqgp/AA1991.DAT:*
| SIDSB / Goddata/geneseq/geneseqgp/AA1991.DAT:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        412676
                              GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 412676 seqs, 60623988 residues
                                                                                                                                                                                                                           September 10, 2001, 14:00:25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                                               OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                  US-08-833-506C-31
97
1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Minimum DB seq length: 0
Maximum DB seq length: 200000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A_Geneseq_0601:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Perfect score:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Scoring table:
                                                                                                                                                                                                                                                                                                                                                                                                                         Sednence:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Searched:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Database
                                                                                                                                                                                                                           Run on:
                                                                                                                                                                                                                                                                                                                                                         Title:
```

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	Human iNOS peptide	Human iNOS peptide	Human iNOS peptide	Human iNOS (1009-1	Inducible nitric o	Sequence encoded b	Nitric-oxide-synth	Hepatocyte inducib	Human inducible ni	Amino acid sequenc	Human inducible ni
SUMMARIES	OI	AAW81252	AAW81279	AAW81210	AAW81192	AAW96322	AAR55764	AAR63206	AAR88464	AAW36113	AAB31724	AAB66724
	08	19	. 19	19	19	50	15	15	17	19	22	22
	Query Match Length DB ID	18	18	18	18	1146	1153	1153	1153	1153	1153	1153
оф	Query Match	100.0	100.0	100.0	94.8	94.8	94.8	94.8	94.8	94.8	94.8	94.8
	Score	97	97	97	92	92	92	92	92	92	92	92
	Result No.	П	7	т	4	2	9	7	80	0	10	11

WPI; 1998-594495/50.

DR

Human iNOS peptide Human iNOS peptide Human iNOS peptide Human iNOS peptide Rat inducible nitrogen Inducible	human: immunoassay; detection; ; sepsis; septic shock; lupus; transplantation; psoriasis; lated".
AAW81255 AAW81315 AAW81259 AAW81259 AAW81194 AAW81194 AAW81194 AAW81193 AAW81253 AAW81256 AAW81256 AAW81257 AAW81256 AAW81317 AAW81257 AAW81317 AAW81317 AAW81317 AAW813197 AAW813197 AAW813197 AAW813197 AAW813197 AAW813197 AAW813197 AAW813197 AAW813197 AAW81317 AAW81317 AAW81317 AAW81317 AAW81317 AAW81317 AAW81317 AAW81317 AAW81317 AAW813197	NGOS; ation.; sis.; sis
11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
82 88 88 88 88 88 88 88 88 88 88 88 88 8	andar (fi) pepti pepti antibi
11165 11165	RESULT 1 AAW81252 st XX AC AAW81252; XX AC AAW81252; XX DT 30-APR-1996; XX Human 1NOS XX Homonoclonal KW MYOCACTGINAL XX KW MOOBA5710-4 XX XX HOMO SAPIET XX XX YX

us-08-833-506c-31.rag

```
÷
                                                                                                            This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; minic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                    Gaps
        immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human INOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                  .;
0
                                                                                                                                                                                                                                                                                                                                                                  Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                 Indels
                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                              Score 97; DB 19;
Pred. No. 1.7e-09;
                                                                                                                                                                                                                                                                                                                                                                                                  Mismatches
                                                                                Example 4; Page 39; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW81279 standard; peptide; 18 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Disclosure; Fig 1; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                              100.0%; Sc
100.0%; Pr
tive 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Human iNOS peptide fragment #5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 rmtlvfgsrrpdedhiyg 18
                                                                                                                                                                                                                                                                                                                                                                                                                                 1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (first entry)
                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity 100.
Matches 18; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                 18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-OCT-1998
                                                                                                                                                                                                                                                                                    nvention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Webber R;
                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW81279
                                                                                                                                                                                                                                                                                                                                                                  Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ~
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Ношо
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW81279
ID AAW8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synchase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; Mab.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nitric oxide synthase; iNOS; human; immunoassay; detection;
                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human INOS or mimics.
                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human inos peptide fragment capable of binding Mab 24B10-2C7.
                                                                                                                                                                    Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 18;
                                                                                                                                                                                                     Indels
                                                                                                                                                                  100.0%; Score 97; DB 19;
100.0%; Pred. No. 1.7e-09;
iive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Score 97; DB 19;
Pred. No. 1.7e-09;
                                                                                                                                                                                                                                                                                                                                                      ¥
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Example 3; Page 33; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                    AAW81210 standard; peptide; 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        100.0%;
100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97WO-US06500
                                                                                                                                                                                                                                     RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                     1 rmtlvfgsrrpdedhiyg 18
                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WPI; 1998-594495/50.
                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity
                                                                                                                       AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      α.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (WEBB/) WEBBER
                                                                                                                     18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                      30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-OCT-1998.
                                                                                                                                                                                                      18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Inducible;
                                                                                      invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         invention
                                                                                                                                                                                                                                                                                                                                                                                     AAW81210;
                                                                                                                       Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Webber
                                                                                                                                                                                                                                     ...
                                                                                                                                                                                                     Matches
                                                                                                                                                                                                                                                                                                                                      AAW81210
                                                                                                                                                                                                                                                                                                                                                                       88888888
                                                                                                                                                                                                                                       à
                                                                                                                                                                                                                                                                 g
```

AAW81192;

AAW81192

Ношо

-

ò

g

Matches

```
Inhibition of cytokine mediated immunotoxicity of cells can be achieved by blocking free radical production or the accumulation of free radicals in that cell. Treatment of insulin dependent diabetes mellitus (IDDM) can be achieved by by blocking nitric oxide (NO) production in a pancreatic beta cell and by providing a composition comprising an agent that reduces levels of fatty acids in the cells and protects beta-cells of the subject against lipid-mediated cells and protectil of the subject against lipid-mediated cells. The methods can be used for protecting cells against immunotoxicity mediated by. e. g. IL-1 beta, IL-1 alpha, gamma IFN, IR-7 IL-9, IL-1, IL-7, IL-1, IL-7, IL-1, I
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Protection of mammalian cells against immunotoxicity or lipotoxicity - used for treating, e.g. diabetes, obesity, wasting syndromes, osteoporosis, inflammatory diseases, autoimmune diseases or
                                                                                                                        Manganese containing superoxide dismutase; MnSOD; IDDM; diabetes mellitus; treatment; therapy; nitric oxide; NO; beta cell; fatty acid; lipotoxic; cytotoxic; cytotoxic; cytotoxic; inflammatory disease; autoimmune disease; neurodegenerative disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 92; DB 20; Length 1146;
Pred. No. 1e-06;
0; Mismatches 1; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Koyama K, Lee Y, Newo
, Thigpen A, Unger RH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Disclosure; Page 247-251; 253pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAR55764 standard; Protein; 1153 AA.
                                                                            Inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      94.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1009 rmtlvfgcrrpdedhiyg 1026
                                                                                                                                                                                                                                                                                                                                                                                                          98WO-US15781
                                                                                                                                                                                                                                                                                                                                                                                                                                                         98US-0055092
97US-0055092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (BETA-) BETAGENE INC.
(TEXA ) UNIV TEXAS SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 neurodegenerative diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Shimabukurom,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Hohmeier H,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WPI; 1999-153448/13.
N-PSDB; AAX08434.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 17; Conserv
                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                       30-JUL-1998;
                                                                                                                                                                                                                                                                                                      WO9906059-A2
                                                                                                                                                                                                                                                                                                                                                                                                                                                         03-MAR-1998;
30-JUL-1997;
                                                                                                                                                                                                                                                                                                                                                           11-FEB-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Σ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR55764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Ohneda
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Clark
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AAR55764
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A X X X
  ó
  ó;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide fragment from human iNOS which is used in the method
                                                                                                                                                                                                                                                                                                                                                                                                                               Inducible nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiphe sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
  ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Score 92; DB 19; Length 10. Pred. No. 1.1e-08;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 18;
  Indels
0;
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                Human iNOS (1009-1026) peptide fragment.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAW96322 standard; Protein; 1146 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Disclosure; Page 21; 93pp; English
                                                                                                                                                                                                                               AA.
;
                                                                                                                                                                                                                            AAW81192 standard; peptide; 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97US-6667777.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94.8%;
94.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97WO-US06500
                                                 RMTLVFGSRRPDEDHIYO 18
                                                                            1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 94.8
Best Local Similarity 94.4
Matches 17; Conservative
  Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    œ.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       the invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-APR-1997;
                                                                                                                                                                                                                                                                                                                              30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 15-0CT-1998
18;
```

Webber R;

Newgard CB;

ö

Gaps

ő

Sequence

AAW96322

SXB

'n

ò q

AAW96322 RESULT

Wed

```
Human chondrocytes were incubated with interleukin-1-beta to induce nitric-oxide-synthase. CDNA was generated and used to construct a library in lambda ZAPII. This was screened with a 650 bp fragment of mouse inducible NO-synthase cDNA to identify the full-length clone pBSHSINOS. The insert was transferred to pSVL to give a vector capable of expressing NO-synthase in CHO cells under control of a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      An inducible nitric oxide syntase (1NOS = AAR88464) is the product
                                                                                                                                                                                                       for diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Inducible nitric oxide synthase; iNOS; hepatocyte; gene therapy; vascular occlusive disease; cancer; infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Inducible nitric oxide synthase gene - useful in gene therapy treat, e.g. vascular occlusive disease and cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 15; Length 1153;
1e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Tzeng
                                                                                                                                                                                    New human inducible nitric oxide synthase - useful identifying enzyme inhibitors and stimulators, and and treatment of e.g. viral infections or tumours
                                                                                                      ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Simmons RL,
                                                                                                        Moncada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Hepatocyte inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 92;
Pred. No.
                                                                                                      Palmer RMJ,
                                                                                                                                                                                                                                                           Disclosure; Page 25-31; 42pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 54-58; 91pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Nussler AK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR88464 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                            heterologous constitutive promoter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               94.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1009 rmtlvfgcrrpdedhiyg 1026
   94WO-GB00621
                                   93GB-0006386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             95WO-US07849
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              940S-0265046
                                                                     (WELL ) WELLCOME FOUND LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (UYPI-) UNIV PITTSBURGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Geller DA,
                                                                                                      Moncada
                                                                                                                                        WPI; 1994-333198/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1996-068641/07.
                                                                                                                                                                                                                                                                                                                                                                                                                              1153 AA;
                                                                                                                                                      N-PSDB; AAQ77700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   N-PSDB; AAT10115
   25-MAR-1994;
                                   26-MAR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          WO9600006-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           20-JUN-1995;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              24-JUN-1994;
                                                                                                      Charles IG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13-MAY-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           04-JAN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Billiar TR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAR88464;
                                                                                                                                                                                                                                                                                                                                                                                                                                 Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR88464
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    RESULT
     à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAQ66914 is from human hepatocyte inducible nitric oxide synthase cDNA clone pHINOS from lambda Zap II CDNA library. The original source was induced human hepatocyte RNA. HINOS CDNA plasmid is pref. transformed in E. coli SOLK (ATCC 69126). The inventors claim a clone with the CDNA sequence in AAQ66914 and a CDNA clone which encodes AAR55764. The cloning and expression of a human tissue nitric oxide synthase CDNA provides a source of the enzyme for therapeutic purposes, for example to prevent the hypotensive shock seen with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                 Sequence encoded by the cDNA clone for human hepatocyte inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                            cDNA clone encoding human inducible nitric oxide synthase - used to prevent the hypotensive shock seen with sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   tumor;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ó
                                                                                   Nitric oxide synthase; hepatocyte; hypotensive shock; therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Nitric-oxide-synthase; NO-synthase; NOS; chondrocyte; interleukin-1-beta; pBSHSINOS; arthritis; hypertension; septic shock; inflammation; ischemia; dementia; obesity; agonist; artagonist; vector; CHO; Chinese hamster ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1; Indels
                                                                                                                                                                                                                                                                                                                            Simmons RL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94.8%; Score 92; DB 15; 94.4%; Pred. No. le-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       0; Mismatches
                                                                                                                                                                                                                                                                                                                            Nussler AK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AAR63206 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                            Disclosure; Fig 1; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      93WO-US11401
                                                                                                                                                                                                                                                         92US-0981344
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 RMTLVFGSRRPDEDHIYQ 18
(first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       17; Conservative
                                                                                                                                                                                                                                                                                                                            Geller DA,
                                                                                                                                                                                                                                                                                           PITTSBURGH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Nitric-oxide-synthase.
                                                                                                                                                                                                                                                                                                                                                         WPI; 1994-200273/24
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
Best Local Similarity
Matches 17; Conserv
                                                                                                                                                                                                                                                                                                                                                                            N-PSDB; AAQ66914
                                                                                                                                                                                                                                                                                           (UYPI-) UNIV
                                                                                                                      Homo sapiens
                                                                                                                                                                                                                       23-NOV-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 cell culture
                                                                                                                                                                                                                                                         25-NOV-1992;
28-DEC-1994
                                                                                                                                                    WO9412645-A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WO9423038-A.
                                                                                                                                                                                                                                                                                                                         Billiar TR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-MAY-1995
                                                                                                                                                                                      09-JUN-1994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   13-OCT-1994
```

Sequence

sepsis.

CDNA

AAR63206;

AAR63206

a

å

Ношо

ö

Gaps

;;

С

ä

S

22222X8

g

ò

```
RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Matches
                                                                                                                       qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              qq
                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This protein comprises human penis inducible nitric oxide synthetase (HPINOS). Its amino acid sequence was deduced from a compactone (see AAT98199) derived from human penile smooth muscle cell mRNA. The invention is directed to a method of treating erectile dysfunction in a patient by providing an agent capable of treating erectile dysfunction, and introducing an effective amount of the agent into the penile tissue of the patient. Preferably, the agent induces cavernosal smooth muscle relaxation, and/or produces an increase in the level of NOS in tissue. Preferably, the NOS is iNOS, and the agent is introduced into the corpora cavernosa of the penis. The agent is preferably an NOS inducer, an NOS protein such as HPINOS, a cDNA encoding an NOS such as HPINOS, or CDNA transformed penile cells, especially corpora cavernosa
                                                                                                                                                                                              Gaps
of a cDNA clone (AAT10115) derived from human hepatocytes induced for iNOS biosynthesis. The iNOS can be obtd. by expression of the cDNA e.g. in mammalian host cells and is used in the development of selective inhibitors of NOS or to treat diseases affected by nitric oxide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Treatment of erectile dysfunction - by introducing an agent into penile tissue, particularly for inducing cavernosal smooth muscle relaxation or increasing NOS levels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         erectile dysfunction; impotence; gene therapy; corpora cavernosa;
                                                                                                                                                                                             ;
0
                                                                                                                                                         Score 92; DB 17; Length 1153;
Pred. No. 1e-06;
                                                                                                                                                                                             Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Nitric oxide synthetase; NOS; iNOS; HPiNOS; human;
                                                                                                                                                                                           1;
                                                                                                                                                                                           0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                     Human inducible nitric oxide synthetase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Claim 12; Page 38-41; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                   AAW36113 standard; Protein; 1153 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Rajfer J;
                                                                                                                                                         94.88;
94.48;
                                                                                                                                                                                                                                                1009 rmtlvfgcrrpdedhiyg 1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (GONZ/) GONZALEZ-CADAVID N F.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               96US-0017373.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97WO-US07643
                                                                                                                                                                                                                           1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                      (first entry)
                                                                                                                                           Ouery Match
Best Local Similarity 94.4*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gonzalez-Cadavid NF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 1998-008577/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1153 AA;
                                                                                                         1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RAJFER J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    N-PSDB; AAT98199
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             09-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         W09742965-A1
                                                                                                                                                                                                                                                                                                                                                                                                                   11-MAY-1998
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               10-MAY-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             20-NOV-1997.
                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                                                                                                     AAW36113;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          relaxant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (RAJF/)
                                                                                                                                                                                                                                                                                                                 σ
                                                                                                                                                                                                                                                                                                                                 AAW36113
```

```
ö
                                            ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, used for isolated tissue perfusion treatment to enhance and induce angiogenesis -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         The specification describes a method for gene therapy for enhancing and inducing angiogenesis. The method uses a nucleic acid delivery vehicle, which comprises a nucleic acid encoding nitric oxide synthase (NOS). The delivery vehicle is used for the manufacture of a pharmaceutical composition for isolated tissue perfusion treatment. The method is useful for enhancing and/or inducing angiogenesis in patients with endothelial dysfunctions, in particular arteriosclerosis. The present sequence represents an inducible NOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                      Amino acid sequence of a human inducible nitric oxide synthase (NOS)
                                                                                                                                                                                                                                                                                                                                                                                                                                Gene therapy, angiogenesis; nucleic acid delivery; arteriosclerosis; nitric oxide synthase; NOS; endothelial dysfunction.
                                            0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 92; DB 22; Length 1153;
Pred. No. 1e-06;
Score 92; DB 19; Length 1153; Pred. No. 1e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1; Indels
                                              1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          le-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Mismatches
                                                Mismatches
                                                                                                                                                                                                                                               AAB31724 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       AAB66724 standard; protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 6; 37pp; English.
                                              0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .;
0
                                                                                                                 1009 rmtlvfgcrrpdedhiyq 1026
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  99EP-0202263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              94.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   07-JUL-2000; 2000WO-NL00482
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    99US-0143101
                                                                                        1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 RMTLVFGSRRPDEDHIYQ 18
                                                                                                                                                                                                                                                                                                                                          (first entry)
Query Match
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Verlinden SFF;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (INTR-) INTROGENE BV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WPI; 2001-123142/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO200103728-A2.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                          30-APR-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         18-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Vogels R,
                                                                                                                                                                                                                                                                                           AAB31724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   AAB66724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAB66724
ID AAB6
XX
AC AAB6
XX
```

```
(WEBB/) WEBBER
          07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                          30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             15-0CT-1998;
                                                                                                                                                                                                                            invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Webber R;
                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                        Query Match
                                                                                                                                                                                                                                                                                                                                                                                        AAW81312
                                             Webber
                                                                                                                                                                                                                                                                                                                                                               AAW81312
  ò
                                                                                                                                                                                                                                                                                                                           g
                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; milic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimnne disease; multiple sclerosis.
                                                                                                                                                                                               Use of a nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, especially useful in gene therapy for enhancing and/or inducing angiogenesis and treating atherosclerosis .
                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                            vehicle comprising a nucleic acid encoding nitric oxide synthase (NOS) activity for the manufacture of a composition for essentially isolated tissue perfusion treatment to enhance and/or induce annylogenesis. The nucleic acid delivery vehicle is particularly useful in gene therapy for the treatment of atherosclerosis.
                                                                                                                                                                                                                                                    The present invention relates to use of a nucleic acid delivery
                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                             Score 92; DB 22; Length 1153; Pred. No. 1e-06;
                                                                                                                                                                                                                                                                                                                                                               1; Indels
                                  Nitric oxide synthase; NOS; angiogenesis; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  /note= "Gln residue amidated"
                                                                                                                                                                                                                                                                                                                                                               Mismatches
                Human inducible nitric oxide synthase.
                                                                                                                                                                                                                                  Examples; Page 14-18; 39pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human iNOS peptide fragment PS-5283.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                               AA.
                                                                                                                                                                                                                                                                                                                                                            ö,
                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW81255 standard; peptide; 15
                                                                                                                                                                                                                                                                                                                                                                                       1009 rmtlvfgcrrpdedhiyg 1026
                                                                                                                                                                                                                                                                                                                                             94.8%;
94.4%;
                                                                                                         99EP-0202263
                                                                                                                         99EP-0202263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                               1 RMTLVFGSRRPDEDHIYQ 18
09-APR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                             Verlinden S;
                                                                                                                                           (INTR-) INTROGENE BV
                                                                                                                                                                             WPI; 2001-125729/14.
                                                                                                                                                                                                                                                                                                                   Ā
                                                                                                                                                                                                                                                                                                                  1153
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Key
Modified-site
                                                                      EP1067190-A1
                                                     Homo sapiens
                                                                                                        09-JUL-1999;
                                                                                                                         09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      , 11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-APR-1999
                                                                                       10-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-OCT-1998
                                                                                                                                                             Vogels R,
                                                                                                                                                                                                                                                                                                                   Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAW81255;
                                                                                                                                                                                                                                                                                                                                                                                                g
                                                                                                                                                                                                                                                                                                                                                                                                                                              õ
```

```
This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or minics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence in presents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; minic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autofimune disease; multiple sclerosis; epitope mapping.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Detection of human inducible nitric oxide synthase - using an · immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Human 1NOS peptide fragment for epitope mapping #33.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       4.1e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       84.5%; Score 82; DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ¥.
                                                                                                                                                                                                                                                                                                                                                                                                         Example 4; Page 39; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84.5.
100.0%; Pic
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAW81312 standard; peptide; 15
97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            4 LVFGSRRPDEDHIYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 lvfgsrrpdedhiyg
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WPI; 1998-594495/50.
                                                                                                                                                                                                        WPI; 1998-594495/50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Best Local Similarity
Matches 15; Conserv
                                                                      (WEBB/) WEBBER R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ď.
```

ö

g

ö

```
Inducible;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        invention
                                                                           invention
                                                                                                                                                                                                                                                                                                                                                               AAW81316;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Sequence
                                                                                                           Sequence
                                                                                                                                                                                                                                                                                                   12
                                                                                                                                                                                                                                                                                                                  AAW81316
                                                                                                                                                                                                                                                                                                   RESULT
8
                                                                                                                                                                                                                                                  a
                                                                                                                                                                                                                                                                                                                                                                δy
                                                                                                                                                                                                                                                                                                                ö
                                         This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) readtive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (inNS) or minics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    This invention describes an immunoassay method where a sample with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                ;
                                                                                                                                                                                                                                                                               Length 15;
                                                                                                                                                                                                                                                                                                               Indels
                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                  4.1e-07;
                                                                                                                                                                                                                                                                               DB 19;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               /note= "His residue amidated"
                                                                                                                                                                                                                                                                               84.5%; Score 82; DB
100.0%; Pred. No. 4.1
ive 0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Human iNOS peptide fragment PS-5287.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW81259 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Example 4; Page 39; 93pp; English.
           Example 4; Fig 7D; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (first entry)
                                                                                                                                                                                                                                                                                                Local Similarity 100.
nes 15; Conservative
                                                                                                                                                                                                                                                                                                                                              18
                                                                                                                                                                                                                                                                                                                                                               4 LVFGSRRPDEDHIYQ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       WPI; 1998-594495/50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       œ
                                                                                                                                                                                                                                   15 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-0CT-1998
                                                                                                                                                                                                       invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Webber R;
                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                 Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW81259
                                                                                                                                                                                                                                                                                                               Matches
                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT 1
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence
tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                monoclonal antibody; mimić; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; epitope mapping.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nitric oxide synthase; iNOS; human; immunoassay; detection;
                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 15;
                                                                                                                                                                                                                                                                                        Length 15;
                                                                                                                                                                                                                                                                                                                                           0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Human iNOS peptide fragment for epitope mapping #37.
                                                                                                                                                                                                                                                                                     DB 19; L
5.9e-07;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          DB 19; L
5.9e-07;
                                                                                                                                                                                                                                                          83.5%; Score 81; DB
100.0%; Pred. No. 5.9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 81;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW81316 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Example 4; Fig 7D; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          83.5%; 5
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97US-6667777.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (first entry)
                                                                                                                                                                                                                                                                                  Query Match 83.5
Best Local Similarity 100.
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                       1 RMTLVFGSRRPDEDH 15
                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ď.
                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (WEBB/) WEBBER
                                                                                                                                                                                                     15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          W09845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   15-OCT-1998
```

0; Indels 0; Mismatches Matches 15; Conservative

0;

0; Gaps

Oy Dp

Search completed: September 10, 2001, 14:00:25 Job time: 169 sec

pyrococcus homo sapien

Perfect score:

Run on:

Scoring table: Sequence:

Searched:

Database

```
091999 procession of the proce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Oguu04 schizosacch
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                014761 homo sapien
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A Ogawa Y., Nishijima S., Goto M., Ida M.;
A Ogawa Y. Nishijima S., Goto M., Ida M.;
T "Cloning and characterization of a novel splice valiant of human induction of an object of a novel splice valiant of human series and characterization of a novel splice valiant of human series and characterization of a novel splice wallant of human submitted (JAN-1999) to the EMBL/GenBank/DDBJ databases.

EMBL; AB022318; BAA37123.1; -...
R HSSP; P35228, 4NOS.
R InterPro; IPR001094; -...
R InterPro; IPR001094; -...
R InterPro; IPR001095; -...
R Pfam; PF00175; Oxidored_fad; 1.
R Pfam; PF0067; FAD_binding; 1.
R PRINTS; PR00369; FAD_binding; 1.
R PRINTS; PR00369; FAD_binding; 1.
R PRINTS; PR00371; FPNCR.
O SEQUENCE 1114 AA; 126748 MW; C1F9624774435571 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   94.5%; Score 86; DB 4; Length 1114; 94.4%; Pred. No. 7.4e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 01-MAY-1999 (TIEMBLrel. 10, Created)
01-MAY-1999 (TIEMBLrel. 10, Last sequence update)
01-CCT-2000 (TIEMBLrel. 15, Last annotation update)
INDUCIBLE NITRIC OXIDE SYNTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PRT; 1114 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ALIGNMENTS
                                                    090 V 199

090 V 1 18

090 V 1 18

090 V 1 18

090 V 19

090 V 19

090 V 18

090 V 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     090004
093947
014761
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
2000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

1000

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                [1]
SEQUENCE FROM N.A.
   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            094994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             094994
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              RESULT
094994
RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DDT ACCOORDING TO BE SEED BY ACCOORDING THE SEED BY SE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       091k91 arabidopsis
0995v9 homo sapien
0995v9 homo sapien
0995v8 homo sapien
0995v7 homo sapien
0995v8 homo sapien
000841 dictyosteli
000841 dictyosteli
                                                                                                                                                                                          September 10, 2001, 14:11:14; Search time 72.54 Seconds (without alignments) 32.830 Million cell updates/sec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Q9r0w4 rattus norv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              094994 homo sapien
097604 canis famil
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     099w28 rattus sp. 093865 candida alb
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             acinetobact
acinetobact
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           pleurotus o
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   saccharomyc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  synechocyst
caenorhabdi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Description
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             099299 s
P72704 s
Q9xwe0 c
Q9rhf6 a
Q9r310 a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 425026
                           GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Total number of hits satisfying chosen parameters:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   425026 seqs, 132305027 residues
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SUMMARIES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Post-processing: Minimum Match 0%
Maximum Match 100%
Listing first 45 summaries
                                                                                                                                              OM protein - protein search, using sw model
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           094994
097604
09R0W4
09QW28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q99299
P72704
O9XWE0
O9XNE0
O9K8310
O74179
O9Y5V9
O9Y5V9
O9Y5V8
O9Y5V8
O9Y5V7
O9Y5V7
                                                                                                                                                                                                                                                                                                                                                                                                                                            BLOSUM62
Gapop 10.0 , Gapext 0.5
                                                                                                                                                                                                                                                                                                                                                                                 1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                sp_rodent:*
sp_unclassified:*
sp_vertebrate:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         sp_invertebrate:*
sp_mammal:*
                                                                                                                                                                                                                                                                                                          US-08-833-506C-32
91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            sp_organelle:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  sp_archea:*
sp_bacteria:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Minimum DB seq length: 0
Maximum DB seq length: 2000000000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query
Match Length DB
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           sp_plant:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          sp_virus:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              sp_fungi:*
sp_human:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sp_phage:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       SPTREMBL_16:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              11114
11154
11147
11147
1047
1047
1058
652
652
652
504
533
796
796
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    sp_mhc:*
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           44...
55...
100...
112...
14...
```

Score

Š

Result

ö

Gaps

ö

~

```
AJ230474;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Q9QW28
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9QW28
      ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ò
                                                                                                                                                                                                                                                                                                          MEDILINE:99431941; PubMed:9746458;

A Wang X., McGregor C.G.A., Miller V.M.;

I'mfduction and captuence of inducible nitric oxide synthase from canine aortic smooth muscle cells.";

Am. J. Physiol. 275:H1129-H1129(1998).

I'm APO77821; AAC78630.1; -.

I'm AFSP. P2947; 1NOS.

InterPro; IPR001094; -.

InterPro; IPR001709; -.

R InterPro; IPR001709; -.

R InterPro; IPR001709; -.

R Pfam; PF00175; oxidored_fad; 1.

R Pfam; PF00175; oxidored_fad; 1.

R Pfam; PF00175; oxidored_fad; 1.

R PRIMTS; PR00539; FLAVODOXIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             REGURECE FROM N.A.

REQUENCE FROM N.A.

RECOURTS AND STAR KYOTO;

RA MEDLINE-99326503; Pubbled-10395902;

RA Keinanen R.A., Vartiainen N., Koistinaho J.;

RA Keinanen R.A., Vartiainen N., Koistinaho J.;

RT "Molecular cloning and characterization of the rat inducible nitric

RT CAIGE Synthase (1NOS) gene.";

RL Gene 234:297-305(1999).

DR EMBL; AJ230464; CAB46089.1; JOINED.

DR EMBL; AJ230466; CAB46089.1; JOINED.

DR EMBL; AJ230466; CAB46089.1; JOINED.

DR EMBL; AJ230466; CAB46089.1; JOINED.

DR EMBL; AJ230469; CAB46089.1; JOINED.

DR EMBL; AJ230470; CAB46089.1; JOINED.

DR EMBL; AJ230470; CAB46089.1; JOINED.

DR EMBL; AJ230471; CAB46089.1; JOINED.

DR EMBL; AJ230471; CAB46089.1; JOINED.

DR EMBL; AJ230472; CAB46089.1; JOINED.

DR EMBL; AJ230472; CAB46089.1; JOINED.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Rattus norvegicus (Rat).
Bukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10116;
                                              OLIMAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
1NDUCIBLE NITRIC OXIDE SYNTHASE.
Canis familiaris (Dog).
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutherla; Carnivora; Fissipedia; Canidae; Canis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match 78.0%; Score 71; DB 6; Length 1154; Best Local Similarity 77.8%; Pred. No. 0.0023; Matches 14; Conservative 0; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1154 AA; 131709 MW; 42CD606E447254CB CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
INDUCIBLE NITRIC OXIDE SYMTHASE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT; 1147 AA
                           PRT; 1154
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      111111 | 11 | 11 | 11 | 25 NNNVEKPPGATPSPSTQD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 NNNVEKAPSATSSPVTQD 18
                       PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                                                       SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                              TISSUE: AORTA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE
                       097604
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Q9R0W4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONTROLL CON
ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           a
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  MEDLINE-93221515; PubMed-7682072;

MEDLINE-93221515; PubMed-7682072;

MEDLINE-93221515; PubMed-7682072;

MEDLINE-93221515; PubMed-7682072;

MEDLINE-93221515; PubMed-7682072;

I Hepatcoytes and macrophages express an identical cytokine inducible nitric oxide synthase gene.";

IL Blochem. Blophys. Res. Commun. 191:767-774(1993).

R Introposition of the proposition of the pr
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Rattus sp.
Eukaryota, Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
NCBI_TaxID=10118;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 74.7%; Score 68; DB 11; Length 1147; 72.2%; Pred. No. 0.0071; Live 0; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 68; DB 11; Length 1147; Pred. No. 0.0071;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                E76B3F8407D54CF6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              2CAFB983E56F651A CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAX-2001 (TrEMBLrel. 16, Last annotation update)
CYTOKINE INDUCIBLE NITRIC OXIDE SYNTHASE, INOS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT; 1147 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
JOINED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1147 AA; 130613 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          001811; -; 1.
1147 AA; 130625 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Pfam; PF00175; oxidored_fad; 1.
Pfam; PF00667; FAD_binding; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
SEQUENCE 1147 AA; 130613 MW;
                                        EMBL, AJ230475, CAB46089.1, JOBMBL, AJ230476; CAB46089.1, JOBMBL, AJ230477; CAB46089.1, JOBMBL, AJ230478; CAB46089.1, JOBMBL, AJ230489; CAB46089.1, JOBMBL, AJ230481; CAB46089.1, JOBMBL, AJ230481; CAB46089.1, JOBMBL, AJ230484; CAB46089.1, JOBMBL, AJ230484; CAB46089.1, JOBMBL, AJ230485; CAB46089.1, JOBMBL, AJ230487; CAB46089.1, JOBMBL, AJ230485; CAB46089.1, JOBMBL, AJ230487; LAB46089.1, JOBMBL, AJZ40897; LAB46089.1, JOBMBL, AJZ40897; LAB460897; LAB4
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     74.78;
     CAB46089.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   25 NNNVEKTPGAIPSPTTQD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match 74.7
Best Local Similarity 72.2
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Query Match 74.7
Best Local Similarity 72.2
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Interpro; IPR001433; -. Interpro; IPR001709; -. Interpro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR001094;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ProDom; PD001811;
```

```
Local Similarity
les 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                         Bacteria; Cyanoba
NCBI_TaxID=1143;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NCBI_TaxID=6239;
                                                                                             (ROTAMASE B).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Harris B.R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Y47H9C.6.
                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Q9XWE0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Q9XWE0
                                    P72704
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            8
                                                                                                                                                                                                                                                                                                                                                                                                                  Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        none;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT
                   RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     O9XWEO
                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                              ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ó
                                                                                                                                                                                                 Leng P., Brown A.J.P.;
"The hyphal-specific gene ALS7 is a member of a Candida albicans gene family encoding agglutinin-like cell surface proteins.";
Submitted (FEB-1998) to the EMBL/GenBank/DDBJ databases.
EMBL, AF051313; AAD02580.1;
SEQUENCE 1047 AA; 111944 MW; C2327659AA911F2E CRC64;
                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Gaps
                                                                                                                               Candida albicans (Yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; mitosporic Saccharomycetales; Candida.
                                                                                                                                                                                                                                                                                                                                                                                                                                                    Saccharomyces cerevisiae (Baker's yeast).
Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes;
Saccharomycetales; Saccharomycetaceae; Saccharomyces.
                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ;
0
                                                                                                                                                                                                                                                                             Length 1047;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DB 3; Length 758;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                                                  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        S., Coster F., Naveau F., Goffeau P
to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           84845 MW; 3B4FA92B91C87F2B CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                  Last sequence update)
Last annotation update)
                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          3,
                                                                                                                                                                                                                                                                             Score 54; DB 3;
Pred. No. 1.3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 47; DB 3
Pred. No. 14;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                     758 AA
                                                                                                                                                                                                                                                                                                 Mismatches
                                                                1047 AA.
                                                                               01-MAY-1999 (TrEMBLrel. 10, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequ
01-MAY-1999 (TrEMBLrel. 10, Last anno
                                                                                                              AGGLUTININ-LIKE CELL SURFACE PROTEIN
                                                                                                                                                                                                                                                                                                                                                                                                         Created)
                                                                                                                                                                                                                                                                                                                                                                                     PRT;
                                                                                                                                                                                                                                                                                                .;
0
                                                                 PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Submitted (MAY-1996) to the EEMBL; X96770; CAA65563.1; -. EMBL; Z73514; CAA97863.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       51.6%;
60.0%;
                                                                                                                                                                                                                                                                              59.3%;
75.0%;
                                                                                                                                                                                                                                                                                                                                                                                                      01-NOV-1996 (TrEMBLrel. 01, 01-NOV-1996 (TrEMBLrel. 01, 01-MAR-2001 (TrEMBLrel. 16,
18
         25 NNNVEKTPGAIPSPTTQD 42
                                                                                                                                                                                                                                                                                                                              Query Match 59.3
Best Local Similarity 75.0
Matches 12; Conservative
                                                                PRELIMINARY;
                                                                                                                                                                                                                                                                                                                    1 NNNVEKAPSATSSPVT 16
                                                                                                                                                                                                                                                                                                                                                                                     PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        309 NVQKVPSATNSKTTK 323
1 NNNVEKAPSATSSPVTQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             3 NVEKAPSATSSPVTQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 S0006079; YPL158C
ENCE 758 AA; 84
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Purnelle B., Comblez
Submitted (JUN-1996)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                          STRAIN-ATCC10261;
                                                                                                                                                             NCBI_TaxID=5476;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=4932;
                                                                                                                                                                                                                                                                                                                                                                                                                                    P2570 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STRAIN-AB972;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SGD; S000
SEQUENCE
                                                                         093865
                                                                                                                                                                                                                                                                                                                                                                                     099299
                                                                                                                                                                                                                                                                                                                                                                                               099299
                                                               093865
                                              Ŋ
                                                                                                                                                                                                                                                                                                                                                                   9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                        ALS7
                                                                                                                                                                                                                                                                                                                                                                    RESULT
                                             RESULT
                                                      093865
                g
                                                                                                                                                                                                                                                                                                                                      g
                                                                                                                                                                                                                                                                                                                                                                                       ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               g
                                                                 ò
å
```

```
01-JAN-1999 (TrEMBLrel. 09, Created)
01-JAN-1999 (TrEMBLrel. 09, Last sequence update)
01-MAY-2000 (TrEMBLrel. 13, Last annotation update)
PROBABLE PEPTIDYL-PROLYL CIS-TRANS ISOMERASE B (EC 5.2.1.8) (PPIASE B)
                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
MEDLINE-97061201: PubMed-8905231;
MEDLINE-97061201: PubMed-8905231;
Kaneko T., Sato S., Kotani H., Tanaka A., Asamizu E., Nakamura Y.,
Miyajima N., Hirosawa M., Sugiura M., Sasamoto S., Kimura T.,
Miyajima N., Hirosawa M., Sugiura M., Nakazaki N., Naruo K., Okumura S.,
Shimpo S., Takeuchi C., Wada T., Watanabe A., Yamada M., Yasuda M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            "Sequence analysis of the genome of the unicellular cyanobacterium Synechocystis sp. strain PCC6803. II. Sequence determination of the entire genome and assignment of potential protein coding regions.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         DNA Res. 3:109-136(1996).

-!- FUNCTION: PPIASES ACCELERATE THE FOLDING OF PROTEINS.
-!- CATALYTIC ACTIVITY: CIS-TRANS ISOMERIZATION OF PROLINE IMIDIC PEPTIDE BONDS IN OLIGOPEPTIDES.
-!- ENZYME REGULATION: INHIBITED BY CYCLOSPORIN A (CSA).
-!- SIMILARITY: BELONGS TO THE CYCLOPHILIN-TYPE PPIASE FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        "Genome sequence of the nematode C.elegans: A platform for
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Submitted (OCT-1998) to the EMBL/GenBank/DDBJ databases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Hypothetical protein; Isomerase; Rotamase.
SEQUENCE 246 AA; 26580 MW; 02080EE3C339932F CRC64;
                                                                                                                                                                                                                                                                                         Cyanobacteria; Chroococcales; Synechocystis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               50.5%; Score 46; DB 2;
47.1%; Pred. No. 6.9;
iive 5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    305
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Created)
                                                                                                                                                                                                                                                              Synechocystis sp. (strain PCC 6803)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; D90900; BAA16711.1;
HSSP; P20752; 1CLH.
InterPro; 1PR002130;
PR031A: PF00160; Pro_isomerase; 2.
PROSITE; PS00170; CSA_PPIASE_1; 1.
PROSITE; PS50072; CSA_PPIASE_2; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
MEDLINE=99069613; PubMed=9851916;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  01-NOV-1999 (TrEMBLrel. 12, 01-MAY-2000 (TrEMBLrel. 13, 01-MAR-2001 (TrEMBLrel. 16, Y47H9C.6 PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 NNNVEKAPSATSSPVTQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Conservative
PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Caenorhabditis elegans.
```

ö

ö

Gaps

ö

```
Irie T., Honda Y., Matsuyama T., Watanabe T., Kuwahara M.; "Genomic sequence encoding manganese peroxidase isozyme, MnP3 from the White-rot basidiomycete, Pleurotus ostreatus."; Submitted (JUL-1998) to the EMBL/GenBank/DDBJ databases. EMBL, AB016519; BAA33009.2; -. HSSP; P06181; 1B85
'pKLH1-like aberrant mercury resistance transposons of environmental
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Arabidopsis thaliana (Mouse-ear cress).
Arabidopsis thaliana (Mouse-ear cress).
Eukaryota; Viridiplantae; Embryophyta; Tracheophyta; Spermatophyta;
Magnoliophyta; eudicotyledons; core eudicots; Rosidae; eurosids II;
Brassicales; Brassicaceae; Arabidopsis.
        Acinetobacter strains: spread, polymorphism and possible origin."; Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases. EMBL; AJ251540; CAB65956.1; -. EMBL; AJ251531; CAB65948.1; -. EMBL; AJ251538; CAB65948.1; -. EMBL; AJ251538; CAB65952.1; -. Probom; PD003738; -; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                Pleurotus ostreatus (Oyster mushroom) (White-rot fungus).
Eukaryota; Fungi; Basidiomycota; Hymenomycetes; Agaricales;
Pleurotaceae; Pleurotus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 352;
                                                                                                                                                                                Length 65;
                                                                                                                                                                                                           5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    352 AA; 36908 MW; E521F96E3B96E131 CRC64;
                                                                                                                                       BF777CE1A70C4DB5 CRC64;
                                                                                                                                                                                                                                                                                                                                                               01-NOV-1998 (TrEMBLrel. 08, Created)
01-MAY-1999 (TrEMBLrel. 10, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           01-0cT-2000 (TrEMBLrel. 15, Created)
01-0cT-2000 (TrEMBLrel. 15, Last sequence update)
01-MAR-2001 (TrEMBLrel. 16, Last annotation update)
                                                                                                                                                                              Score 45; DB 2;
Pred. No. 2.8;
2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              3,
                                                                                                                                                                                                                                                                                                                                   352 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB .
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Pfam; PF00141; peroxidase; 1.
PRINTS; PR00458; PEROXIDASE.
PROSITE; PS00435; PEROXIDASE.
PROSITE; PS00436; PEROXIDASE.2; UNKNOWN.1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 45;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            49.5%;
                                                                                                                         65
6837 MW;
                                                                                                                                                                                49.5%;
                                                                                                                                                                                                                                                                                                                                                                                                       MANGANASE PEROXIDASE (MNP3)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Query Match
Best Local Similarity 53.0
7; Conservative
                                                                                                                                                                                                          Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                      PRELIMINARY;
                                                                                                                                                                                                                                     2 NNVEKAPSATSSPVT 16
                                                                                                                                                                                                                                                               2 NNPERLPSETHKPIT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  InterPro; IPR002016; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   14
                                                                                                                                                                                Query Match
Best Local Similaritý
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     2 NNVEKAPSATSSP
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A.
                                                                                                                                       65 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NCBI_TaxID 5322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       GB|AAF23297.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Peroxidase.
SEQUENCE
                                                                                                                                       SEQUENCE
                                                                                                             Plasmid.
                                                                                                                          NON_TER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Q9LK91;
                                                                                                                                                                                                                                                                                                                                                074179;
                                                                                                                                                                                                                                                                                                                                   074179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Q9LK91
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       RESULT 12
Q9LK91
                                                                                                                                                                                                                                                                                                           RESULT 11
                                                                                                                                                                                                                                                                                                                        074179
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ID DI DI SCO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            q
 ò
                                                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                                                      à
                                                                                                                                                    ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
TRANSPOSON-ABERRANT MERCURY RESISTANCE TRANSPOSON;
Kholodii G.Y., Mindlin S.Z., Lomovskaya O.L., Gorlenko Z.M.,
Yurieva O.Y., Nikiforov V.G.;
"PKLH1-like aberrant mercury resistance transposons of environmental
Acinerobacter strains: spread, polymorphism and possible origin.";
Submitted (DEC-1999) to the EMBL/GenBank/DDBJ databases.
EMBL; AJ251518; CAB65944.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                       Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        .
0
                                                                                                                                                    ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
Kholodii G.Y., Mindlin S.Z., Lomovskaya O.L., Gorlenko Z.M.,
Yurieva O.V., Nikiforov V.G.;
                                                                                                                                                                                                                                                                                                                                                                                                       Bacteria; Proteobacteria; gamma subdivision; Moraxellaceae;
Acinetobacter.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Plasmid pKLH103, Plasmid pKLH102, and Plasmid pKLH104.
Bacteria; Proteobacteria; gamma subdivision; Moraxellaceae;
                                                                                                                          Length 305;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 45; DB 2; Length 65;
Pred. No. 2.8;
                                                                                                                                                      Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                6D8A0D840B832416 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    BF777CE1A70C4DB5 CRC64;
                                                                                                                                                                                                                                                                                                        01-MAY-2000 (TrEMBLrel. 13, Created)
01-MAY-2000 (TrEMBLrel. 13, Last sequence update)
01-MAY-2000 (TrEMBLrel. 13, Last annotation update)
URF-1 PROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        5,
                                                                                                                         Score 46; DB 5;
Pred. No. 8.5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  65 AA.
                                                                                                                                                                                                                                                                                 Ā
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        2; Mismatches
                                                                                                                                                      4; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Created)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT;
                                                                                                                                                                                                                                                                               PRT;
                                                                 P10; 1.
35084 MW;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      65 65
65 AA; 6837 MW;
          Science 282:2012-2018(1998).
EMBL; AL032657; CAA21735.2;
HSSP; P42574; 1CP3.
                                                                                                                       50.5%;
llarity 57.1%;
Conservative
                                                                                                                                                                                                                                                                                                                                                                             Acinetobacter calcoaceticus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
Best Local Similarity 53.3%;
Matches 8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            01-MAY 2000 (TrEMBLrel. 13, 01-MAY 2000 (TrEMBLrel. 13, 01-MAR-2001 (TrEMBLrel. 16, URF-1 PROTEIN (FRAGMENT).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRELIMINARY;
                                                    Pfam; PF00655; ICE_P10; SEQUENCE 305 AA; 3508.
                                                                                                                                                                                                                                                                               PRELIMINARY;
 investigating biology.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 2 NNPERLPSETHKPIT 16
                                                                                                                                                                                              : |:|:|||:|||
170 DPGPTASSSPLTQD 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 NNVEKAPSATSSPVT 16
                                                                                                                                                                                5 EKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Acinetobacter lwoffil.
                                                                                                                       Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=28090;
                                                                                                                                                                                                                                                                                                                                                                                                                                   NCBI_TaxID=471;
                                                                                                                                                                                                                                                                                                                                                                                          Plasmid pKLH1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Acinetobacter
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NON_TER
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Plasmid
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                09R310;
                                                                                                                                                                                                                                                                              Q9RHF6
Q9RHF6;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Q9R310
                                                                                                                                                                                                                                                                                                                                                                URF-1.
                                                                                                                                                                                                                                                    Φ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        RESULT 10
                                                                                                                                                                                                                                                  RESULT
Q9RHF6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   g
                                                                                                                                                                                                                                                                               g
RT
RL
DR
DR
DR
DR
SO
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    à
                                                                                                                                                                                ð
```

ö

Gaps

ö

Indels

```
MEDLINE-99199287; PubMed=10097140; MUTAKUMO Y., Rattan S., Inoue H., Ishii H., Baffa R., Numata S.I., Murakumo Y., Rattan S., Inoue H., Ishii H., Edanza V., Alder H., Croce C.M.; The FEZ1 gene at chromosome 8p22 encodes a leucine-zipper protein, and its expression is altered in multiple human tumors."; Proc. Natl. Acad. Sci. 05.39.89.3933(1999).

EMBL; ARI23655, AAD23836.1; SEQUENCE 537 AA; 59829 MW; CEOF771B1629051B CRC64;
                          Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Search completed: September 10, 2001, 14:11:15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query-Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NCBI_TaxID=9606;
                                                                                                      NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Job time: 594 sec
                                                                                                                                                                                                                                                                                                                                                                                                                                          Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 09Y5V8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     RESULT 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          09Y5V8
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                                                                                                                                                                               Nakamura Y.;
"Structural analysis of Arabidopsis thaliana chromosome 3. II.
Sequence features of the regions of 4,251,695 bp covered by ninety Pl,
TAC and BAC clones.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-91919287; PubMed-10097140; MINTAKUMO Y., Rattan S., Inoue H., Ishii H., Baffa R., Numata S.I., Murakumo Y., Rattan S., Inoue H., Ishii H., Baffa R., Numata S.I., Murakumo Y., Rattan S., Inoue H., Mori M., Fidanza V., Aldar H., Croce C.M.; "The FEZI gene at chromosome 8p22 encodes a leucine-zipper protein, and its expression is altered in multiple human tumors."; Proc. Natl. Acad. Sci. U.S.A. 96:3928-3933(1999).

EMBL; AF123656; AAD23837.1; -
SEQUENCE 504 AA; 55611 MW; 6665CACB72272BC0 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens (Human).
Sukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                 Kaneko T., Kato T., Sato S., Nakamura Y., Asamizu E., Tabata S., Submitted (JUL-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Score 45; DB 10; Length 652;
Pred. No. 26;
3; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match 48.4%; Score 44; DB 4; Length 504; Best Local Similarity 38.9%; Pred. No. 29; Matches 7; Conservative 4; Mismatches 7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                          ProDom; PD001272; -; 1.
SEQUENCE 652 AA; 73666 MW; D567964FFE1F4CE6 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                01-NOV-1999 (TrEMBLrel. 12, Created)
01-NOV-1999 (TrEMBLrel. 12, Last sequence update)
01-NOV-1999 (TrEMBLrel. 12, Last annotation update)
FEZI.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           504 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   537 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          01-NOV-1999 (TrEMBLrel, 12, Created)
01-NOV-1999 (TrEMBLrel, 12, Last seq
01-NOV-1999 (TrEMBLrel, 12, Last ann
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 49.5%;
                                                                                                                                                                                                                                                                                                                                                      DNA Res. 7:217-221(2000).
EMBL; AP000371; BAB02532.1;
InterPro; IPR000313; -.
InterPro; IPR001848; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  :| :| || || || :: |
242 SNKADKGPSCVRSPISTD 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity 56.2%
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               567 NRSLEKCPFATTSTVT 582
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 NNNVEKAPSATSSPVT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             PRELIMINARY;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PRELIMINARY;
                                                    SEQUENCE FROM N.A.
                                                                                                                                                                             SEQUENCE FROM N.A.
                                                                                                                                                                                                     STRAIN-COLUMBIA;
PubMed-10907853;
                                                                               STRAIN-COLUMBIA;
NCBI_TaxID=3702;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        09Y5V9;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Q9Y5W0
Q9Y5W0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      RESULT 13
09Y5V9
AC 09Y5V9
AC 09Y5V9, DT 01-NOV.
DT 01-NOV.
DT 01-NOV.
DF FEZI.
CO HAMMAINO SC OC ENKARY
CO MAMMAINO SC OC MAMMAINO SC MAMMAINO SC MAMMAINO SC MAMMAINO SC MAMMAINO SC MAMMAIN SC MAMMAINO SC MAMM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           09Y5V9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           RESULT 14
Q9Y5W0
ID Q9Y5W0
AC Q9Y5W0
DT 01-NOV
DT 01-NOV
DT 01-NOV
DF FEZI
  g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ô
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       MEDLINE-99199287; PubMed=10097140; Murakumo Y., Rattan S., Inoue H., Ishii H., Baffa R., Numata S.T., Murakumo Y., Rattan S., Inoue H., Ishii H., Eaffanza V., Alder H., Croce C.M.; The FEZ1 gene at chromosome 8p22 encodes a leucine-zipper protein, and its expression is altered in multiple human tumors."; Proc. Natl. Acad. Sci. 05. 396:3928-3933(1999).
EMBL; AP123657, AAD23838.1; -. SEQUENCE 563 AA; 62910 MW; EGEF5DZ60E41380C CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens (Human).
Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
                                               ;;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
Score 44; DB 4; Length 537;
Pred. No. 31;
4; Mismatches 7; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48.4%; Score 44; DB 4; Length 563; 38.9%; Pred. No. 33;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7; Indels
                                                                                                                                                                                                                                                                                                                        Last sequence update)
Last annotation update)
                                                                                                                                                                                                                                                       563 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 4; Mismatches
                                                                                                                                                                                                                                                                                                  Created)
                                                                                                                                                                                                                                                     PRT;
  48.48;
38.98;
                                                                                                                                                                                                                                                                           01-NOV-1999 (TrEMBLrel. 12, 01-NOV-1999 (TrEMBLrel. 12, 01-NOV-1999) (TrEMBLrel. 12, FEZ1.
                                                                                                                         242 SNKADKGPSCVRSPISTD 259
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        242 SNKADKGPSCVRSPISTD 259
                                                                                          1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              1 NNNVEKAPSATSSPVTQD 18
                   Best Local Similarity 38.9
Matches 7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              7; Conservative
                                                                                                                                                                                                                                                     PRELIMINARY;
```

This Page Blank (uspio)

Н

GenCore version 4.5 Copyright (c) 1993 - 2000 Compugen Ltd.

protein search, using sw model OM protein - September 10, 2001, 14:09:54 Run on:

; Search time 23.82 Seconds
(without alignments)
25.886 Million cell updates/sec

US-08-833-506C-32 Perfect score:

1 NNNVEKAPSATSSPVTQD 18 Sequence:

BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

93435 seqs, 34255486 residues Searched:

93435 Total number of hits satisfying chosen parameters:

length: 0 length: 2000000000 sed Minimum DB : Maximum DB :

Post-processing: Minimum Match 0% Maximum Match 100% Listing first 45 summaries

SwissProt_39:* Database : Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

	Description	homo sapien		l homo sapien	_	_		psendomonas (-		epstein-bar	-	3 ebola virus	_	-	-			-		-					schistosoma	5 caenorhabdi	saccharomyc		_		clostridium clostridium		saccharomyc
	Descri	P35228	006518	060591	046660	P29477	074623	P06690	Q9xyd3	P38938	P03186	066799	Q89853	P97929	003345	099600	P01129	043111	P15541	P22265	P32310	P11557	P20398	. 001295	029026	P16463	061955	P40214	P40463	P21712	9000	P04956	004725	004893
SUMMARIES	TI OI	NS2A_HUMAN	NOS2_RAT	NS2D_HUMAN	NOS2_MACMU	NOS2_MOUSE	ALS3_CANAL	MERE_PSEAE	HBL1_CAEEL	CEK1_SCHPO	TEGU_EBV	VGP_EBORE	VGP_EBORS	BRC2_MOUSE	LIN3_CAEEL	YS45_CAEEL	CC10_SCHPO	PME3_PHAVU	AMPN_RABIT	TSH_DROME	OPSB_CARAU	DAMX_ECOLI	GV7_XENLA	BRC1_DROME	BM88_PIG	F801_SCHMA	IFE3_CAEEL	YM22_YEAST	YIN5_YEAST	YFHA_ECOLI	AP54_YEAST	GUNB_CLOTM	TLE2_HUMAN	YM96_YEAST
	DB	-	٦	H	٦	П	-	Н	-	Н		П		П	П	П	П	П	Н		-													7
	Query Match Length	1153	1147	1147	162	1144	1119	78	982	1338	3149	677	677	3329	438	428	167	581	962	993	351	427	591	727	140	238	248	342	436	444	475	563	743	1140
di	Query Match	94.5	74.7	74.7	71.4	9.79	6.	49.5	48.4	48.4	48.4			7	46.2	2		Ŋ.	44.5	4	4	4	44.0	4	ä	ς.	ς.	5	42.9	'n	ς.	7	42.9	42.9
	Score	98	68	89	65	57	54		44	44	44	43.5	æ.	43.5	42	ä	41.5	41	ö	40.5	40	40	40	40	39	39	39	39	39	39	39	39	39	39
	Result No.	1	7	m	4	S	9	7	80	σ	10	11	12	13	14	15	16	17	18	19	70	21	22	23	24	25	56	27	28	59	30	31	32	33

P54683 dictyosteli P34661 caenorhabdi P7267 rhodococcus O57060 haemophilus O84456 chlamydia t Q09108 gallus gall P23624 saccharomyc Q92908 homo sapien P3343 saccharomyc Q95179 equus asinu P20395 rattus norv P47799 equus cabal
TAGB_DICDI YOY3_CAEEL YATA_RHOER YO95_HAEIN UPPS_CHLTR SCE_CHICK SCE_CHICK SCE_CHICK SCF_CHICK STAGAT GATG_HUMAN YKMA_YEAST FSHR_RAT FSHR_RAT
1905 98 98 251 253 287 291 449 687 692 694
4 4 1
5 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8
WWWWWWW44444 40000000000000000000000000

ALIGNMENTS

```
[2]
SEQUENCE FROM N.A.
TISSUE-Colorectal adenocarcinoma;
MEDLINE-94032282; PubMed-7692964;
Sherman P.A., Laubach V.E., Reep B.R., Wood E.R.;
"Purification and cDNA sequence of an inducible nitric oxide synthase from a human tumor cell line.";
Blochemistry 32:11600-11605(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               "Molecular cloning and expression of inducible nitric oxide synthase from human hepatocytes.";
Proc. Natl. Acad. Sci. U.S.A. 90:3491-3495(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
TISSUB-Articular chondrocytes;
MEDLINE-94368816; PubMed=7522054;
Maier R., Bilbe G., Rediske J., Lotz M.;
"Inducible nitric oxide synthase from human articular chondrocytes: cDNA cloning and analysis of mRNA expression.";
Biochim. Biophys. Acta 1208:145-150(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Park C.S., Pardhasaradhi K., Gianotti C., Villegas E., Krishna G.; "Human retina expresses both constitutive and inducible isoforms of nitric oxide synthase mRNA.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Geller D.A., Lowenstein C.J., Shapiro R.A., Nussler A.K.,
di Silvio M., Wang S.C., Nakayama D.K., Simmons R.L., Snyder S.H.,
Billiar T.R.;
                                                                                                                                                                                                                                                                                                         Homo sapiens (Human).
Eukaryota: Metazoa; Chordata; Craniata; Vertebrata; Euteleostoml;
Mammalia; Eutheria; Primates; Catarrhini; Hominidae; Homo.
NCBI_TaxID=9606;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 an
                             NS2A_HUMAN STANDARD; PRT; 1153 AA.
P35228 0.16692; 060757; 016263;
01-FEB-1994 (Rel. 28, Created)
01-FEB-1996 (Rel. 33, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC. 1.14.13.39) (NOS, TYPE II)
(INDUCIBLE NOS) (INOS) (HEPATOCYTE NOS).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-Chondrocytes;
MEDLINE=94068614; PubMed=7504305;
Charles I.G., Palmer R.M.J., Hickery M.S., Bayliss M.T.,
Chubb A.P., Hall V.S., Moss D.W., Moncada S.;
"Cloning, characterization, and expression of a cDNA encoding inducible nitric oxide synthase from the human chondrocyte.";
Proc. Natl. Acad. Sci. U.S.A. 90:11419-11423(1993).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       [5]
SEGUENCE FROM N.A.
TISSUE-Retina;
MEDLINE-95091827; PubMed=7528017;
AEDLINE-95091827; PubMed=7528017; PubMed=7528017; PubMed=758017; PubM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      MEDLINE=93234523; PubMed=7682706;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A. TISSUE=Liver;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                      NOS2A OR NOS2
NS2A_HUMAN
```

```
"Structural characterization of nitric oxide synthase isoforms reveals striking active-site conservation."; Nat. Struct. Biol. 6:233-242(1999).
-I- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   X-RÁY CRYSTALLOGRAPHY (2.55 ANGSTROMS) OF 74-504.
MEDITNE-99340067; PubMed-10409685;
LLI H., Raman C.S., Glaser C.B., Blasko E., Young T.A., Parkinson J.F.,
Whitlow M., Poulos T.L.,
                                                                                                                                 SEQUENCE FROM N.A.
TISSUE-Airway epithelium;
MEDLINE-95372368; Pubmed-7544004;
GLO F.H., de Raeve R.H., Rice T.W., Stuehr D.J., Thunnissen F.B.J.M.,
Erzurum S.C.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         "Crystal structures of zinc-free and -bound heme domain of human inducible nitric-oxide synthase. Implications for dimer stability and comparison with endothelial nitric-oxide synthase."; J. Biol. Chem. 274:21276-21284(1999).
                                                                                                                                                                                                                                                                                                 Luss H., Li R.-K., Shapiro R.A., Tzeng E., McCowan F.X., Yoneyama T., Hatakayama K., Geller D.A., Mickle D.A.G., Simmons R.L., Billiar T.R.;
                                                                                                                                                                                                      "Continuous nitric oxide synthesis by inducible nitric oxide synthase
                                                                                                                                                                                                                                                                                                                                                         ដ
                       SEQUENCE FROM N.A.

TISSUE-Glioblastoma;

MEDLINE-92155267; PubMed-7531687;

Hokari A., Zeniya M., Esumi H.;

Hokari A., Zeniya M., Esumi H.;

"Cloning and functional expression of human inducible nitric oxide synthase (NOS) cDNA from a glioblastoma cell line A-172.";

J., Blochem. 116:575-581(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            CHARACTERIZATION.
MEDLINE-96047340; PubMed-7558036;
MEDLINE-96047340; PubMed-7558036;
MEDLINE-96047340; PubMed-7558036;
Lepore J.J., Wolfram J.R., Brown D.M., Roberts J.D. Jr., Zapol D.G., Lepore J.J., Filippov G., Thomas J.E., Jacob H.J., Bloch D.B.;
"Three members of the nitric oxide synthase II gene family (NOSZA, NOSZB, and NOSZC) colocalize to human chromosome 17.";
Genomics 27:526-530(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                  McLay J.S., Chatterjee P., Nicolson A.G., Jardine A.G., McKay N.G. Ralston S.H., Grabowski P., Haites N.E., Macleod A.M.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           X-RAY CRYSTALLOGRAPHY (2.25 ANGSTROMS) OF 82-528.

BEDLINEW-SQF173.27; PUDMed-10074942;

Fischmann T.O., Hruza A., Niu, X.D., Fossetta J.D., Lunn C.A.,

Dolphin E., Prongay A.J., Reichert P., Lundell D.J., Narula S.K.,
                                                                                                                                                                                                                                                                                                                                       "Dedifferentiated human ventricular cardiac myocytes express inducible nitric oxide synthase mRNA but not protein in response IL-1, TNF, IFNgamma, and LPS.";
J. Mol. Cell. Cardiol. 29:1153-1165(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hawksworth G.M.;
"Nitric oxide production by human proximal tubular cells: a novel
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Taylor B.S., Alarcon L.H., Billiar T.R.; "Inducible nitric oxide synthase in the liver: regulation and
                                                                                                                                                                                                                   in normal human airway epithelium in vivo.";
Proc. Natl. Acad. Sci. U.S.A. 92:7809-7813(1995).
Biochem. Biophys. Res. Commun. 205:85-91(1994).
                                                                                                                                                                                                                                                                      TISSUE-Cardiac myocytes;
MEDLINE-97304504; Pubmed-9160867;
                                                                                                                                                                                                                                                                                                                                                                                                                       TISSUE-Kidney;
MEDLINE-95165725; PubMed-7532248;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CHARACTERIZATION.
MEDLINE-98389865; Pubmed-9721329;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         immunomodulatory mechanism?";
Kidney Int. 46:1043-1049(1994).
                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE OF 380-473 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             function.";
Biokhimita 63:766-781(1998).
                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Weber P.C
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                         THE ENZYME (BY SIMILARITY).
BYZYME REGULATION. REGULARED BY CALCIUM/CALMODULIN (IN CONTRAST WITH MOUSE NOS2). ASPIRIN INHIBITS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY BE EXERTED AT THE LEVEL OF
                                                                                                                                                                                                                                                                                     TRANSLATIONAL, POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY (BY SIMILARITY).

-1 SUBBUNIT: HOWODIME: EXPRESSED IN THE LIVER, RETINA, BONE CELLS AND AIRWAY EPITHELIAL CELLS OF THE LUNG. NOT EXPRESSED IN THE
                                                                                   NITRIC OXIDE + N NADP(+).
-1- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIATES TUMORICIDAL AND BACTERICIDAL ACTIONS.

CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE +
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNOR.
VXIONTS; PR00371; FPNOR.
Heme: Phosphoryation; Zinc; Metal-binding; Multigene family;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (BY CAPK) (POTENTIAL).
(BY CAPK) (POTENTIAL).
(BY CAPK) (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            FMN (PYRIMIDINE PART) (BY SIMÍLARITY).
FAD (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                CALMODULIN-BINDING (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- INDUCTION: BY TREATMENT WITH ENDOTOXINS OR CYTOKINES.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             6
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ZINC.
PHOSPHORYLATION (PHOSPHORYLATION (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         (IN REF.
(IN REF.
(IN REF.
(IN REF.
(IN REF.
(IN REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   REF.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      -!- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NI)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A H F 4 H H < F G
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^ ^
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ZINC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           EMBL, L09210; AAA59171.1; --
EMBL, L24553; AAA36375.1; --
EMBL, U73029; CAA51512.1; --
EMBL, U05810; AAA56666.1; --
EMBL, U1511; AAA5666.1; --
EMBL, D26525; BAA05531.1; --
EMBL, AP068236; AAC19133.1; --
EMBL, S75615; AAA179.1; --
EMBL, S75615; AAA179.1; --
EMBL, S75615; AAA179.1; --
EMBL, S75615; AAA179.1; --
EMBL, S75615; AAA775.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    InterPro; IPR001094; -.
InterPro; IPR001433; -.
InterPro; IPR001709; -.
InterPro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1NSI; 07-JAN-00.
2NSI; 07-JAN-00.
4NOS; 04-FEB-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    200
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            623
767
903
978
1076
110
115
234
892
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       266
423
439
608
676
800
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   23
154
177
                                                                                                                                                                                                                                                                                                                                                                                                                                              PLATELETS
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            3D-structure
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MIM; 163730;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   DOMAIN
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      NP_BIND
NP_BIND
NP_BIND
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         MOD_RES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       PDB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   PDB;
```

4

```
CDNA
  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-SPRAGUE-DAWLEY; TISSUE-Hepatocytes;
MEDLINE-93221515; PubMed-7682072;
Wood E.R., Berger H. Jr., Sherman P.A., Lapetina E.G.;
Hepatocytes and macrophages express an identical cytokine inducible nitric oxide synthase gene.";
                                  Gaps
                                                                                                                                                                                                                                 Eukaryota; Métazoa; Chórdata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Rattus.
                                                                                                                                                                                                                                                                                                                                                                           STRAIN-WISTAR; TISSUE-Pancreatic islets;
MEDLIKE-95309542; PubMed=7540573;
Karlsen A.E., Andersen H.U., Vissing H., Larsen P.M., Fey S.J.,
Cuartero B.G., Madsen O.D., Petersen J.S., Mortensen S.B.,
Mandrup-Poulsen T., Boel E., Nerup J.;
"Cloning and expression of cytokine-inducible nitric oxide synthase
Diabetes 44:753-758(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Galea E., Reis D.J., Feinstein D.L.; ^{\circ} Cloning and expression of inducible nitric oxide synthase from rat
                                                                                                                                                                                                                                                                                      TISSUE-Vascular smooth muscle;
MEDLINE-93191721; PubMed-7680561;
Nunokawa Y., Ishida N., Tanaka S.;
"Cloning of inducible nitric oxide synthase in rat vascular smooth
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Adachi H., Iida S., Oguchi S., Ohshima H., Suzuki H., Nagasaki K., Kawasaki H., Sugimura T., Esumi H.; Molecular cloning of a cDNA encoding an inducible calmodulin-dependent nitric-oxide synthase from rat liver and its expression in COS 1 cells.";
                                                                                                                      MOS2_KAY
STANDARD; PRT; 1147 AA.
Q06518; P97774; 035765; 035766; Q64558; Q64005; Q63267;
01-JUN-1994 (Rel. 29, Created)
01-OCT-1996 (Rel. 34, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
NOS2.
                                  .;
0
          Length 1153;
Score 86; DB 1; Length LLD.
Pred. No. 6.5e-06;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Biochem. Biophys. Res. Commun. 191:767-774(1993)
                                                                                                                                                                                                                                                                                                                                             Biochem. Biophys. Res. Commun. 191:89-94(1993).
                                0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          STRAIN-SPRAGUE-DAWLEY; TISSUE-AStrocytes; MEDLINE-94231594; PubMed-7513765;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     SEQUENCE FROM N.A., AND PARTIAL SEQUENCE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STRAIN=SPRAGUE-DAWIEY; TISSUE-Aorta;
MEDLINE-94325351; PubMed-7519448;
Geng Y.J., Almquist M., Hansson G.K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               J. Neurosci. Res. 37:406-414(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 TISSUE=Liver;
MEDLINE=94039059; PubMed=7693462;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Eur. J. Biochem. 217:37-43(1993).
           94.58;
94.48;
                                                                 25 NNNVEKAPCATSSPVTQD 42
                                                      1 NNNVEKAPSATSSPVTQD 18
                                 Conservative
                                                                                                                                                                                                                         Rattus norvegicus (Rat).
          Query Match
Best Local Similarity
Matches 17; Conserv
                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                   SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                        NCBI_TaxID-10116;
                                                                                                                                                                                                                                                                                                                                    muscle cells.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      astrocytes
                                                                                                            7
                                                       ò
                                                                            a
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     BΕ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN; TISSUE=Vascular smooth muscle;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NITRIC OXIDE + N NADP(+).
-!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBUNIT: HOMODIMER (BY SIMILARITY).

TISSUE SPECIFICITY: IN NORMAL KIDNEY, EXPRESSED PRIMARILY IN THE MEDULLARY THICK ASCENDING LIMB, WITH MINOR AMOUNTS IN THE MEDULLARY COLLECTING DUCT AND VASA RECTA BUNDLE.

INDUCTION: BY INTERFERON GAMMA AND LIPOPOLYSACCHARIDE.

SIMILARITY: BELONGS TO THE NOS FAMILY.
A cloning and expression of inducible nitric oxide synthase from vascular smooth muscle cells.";
                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
MEDLINE-97070590; PubMed-8913516;
TSUCSUMISHITA Y., Kawai Y., Takahara H., Onda T., Miyoshi J.,
Futati S., Niwa M.;
Futati S., Niwa M.;
Sequence analysis of inducible nitric oxide synthase in rat kidney,
lung, and uterus.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       "Vascular smooth muscle nitric oxide synthase anomalies in Dahl/Rapp
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              INHIBITS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     STRAIN-WISTAR; TISSUE-Renal glomerulus;
Saura M., Zaragoza C., Martinez-Dalmau R., Perez-Sala D., Lamas S.;
"Advances in the studies of NO synthesis regulation in mesanglial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  "Location of an inducible nitric oxide synthase mRNA in the normal
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Morrissey J.J., McCracken R., Kaneto H., Vehaskari M., Montani D.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN.
                                                                                                                                                                                                        H., Aoyama
                                                                                                                                                                                                Kosuga K., Yui Y., Hattori R., Sase K., Eizawa H., Aoyam
Inoue R., Sasayama S.;
"Cloning of an inducible nitric oxide synthase from rat
polymorphonuclear neutrophils.";
Endothelium 2:217-221(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       STRAIN-SPRAGUE-DAWLEY; TISSUE-Renal glomerulus; MEDLINE-94276509; PubMed-7516453;
                                                  rat vascular smooth muscle cells.";
Biochim. Biophys. Acta 1218:421-424(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SEQUENCE OF 426-788 FROM N.A. STRAIN-DAHL/RAPP SALT SENSITIVE STRAIN-MEDILINE-9819502; Pubmed-9335415; Chen P.Y., Gladish R.D., Sanders P.W.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Biol. Pharm. Bull. 19:1374-1376(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Hypertension 31:918-924(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Kidney Int. 45:998-1005(1994)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 420-479 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE OF 509-740 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE OF 479-655 FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Nefrologia 16:35-39(1996).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              salt-sensitive rats.
                                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              TISSUE-Myocardium;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     THE ENZYME
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Klahr S.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            kidney
```

25 NNNVEKTPGAIPSPTTQD 42

```
qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                           OXIGOTEGUCIGASS; NALE,

ZINC; Metal-binding; Multigene family.

BINDING 197 197 CALMODULIN-BINDING (POTENTIAL).

DOMAIN 506 526 CALMODULIN-BINDING (POTENTIAL).

NP_BIND 620 651 FWN (PYRIMIDINE PART) (BY SIMILARITY).

NP_BIND 764 775 FAD (ADP PART) (BY SIMILARITY).

NP_BIND 900 910 FAD (FLAVIN PART) (BY SIMILARITY).

NP_BIND 975 993 NADP (RIBOSE PART) (BY SIMILARITY).

NP_BIND 1073 1088 NADP (RIBOSE PART) (BY SIMILARITY).

METAL 107 107 ZINC (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Length 1147;
                                                                                                                                     InterPro; IPR001034; -
InterPro; IPR001034; -
InterPro; IPR001033; -
InterPro; IPR0010309; -
InterPro; IPR00109; -
Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
PRINTS; PR00369; FLAVODOXIN.
PRINTS; PR00371; FPNCR.
Oxidoreductase; NADP; FAD; FMN; Calmodulin-binding; Heme;
                                                                                                                                                                                                                                                                                                                                                                                               7 AND 8).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     REF. 5 AND 9).
                                                                                                                                                                                                                                                                                                                                                        5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 AND 6).
                                                                                                                                                                                                                                                                                                                                                        3 AND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             G -> A (IN REF. 11).
G -> V (IN REF. 1 ANI
A -> R (IN REF. 2).
D -> G (IN REF. 10).
ET -> VP (IN REF. 1).
Q -> P (IN REF. 10).
                                                                                                                                                                                                                                                                                            (IN REF. 7)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Score 68; DB 1;
Pred. No. 0.0048;
0; Mismatches 5
                                                                                                                                                                                                                                                                                                                                                              REF.
REF.
REF.
or send an email to license@isb-sib.ch)
                                                                                                                                                                                                                                                                                                                                                                                       PONSHERHANCIA
                                                                                                                                                                                                                                                                                                 ^ ^ ^ ^ ^ ^ ^ ^ ^ ^
                                                                                                                                                                                                                                                                                                                                                                                       \uparrow\uparrow\uparrow
                              003699; AAC13747.11; D12520; BAA02090.11; L12562; AAA41720.11; X76881; CAA54208.11; D44591; BAA07994.11; D836619; AAC16402.11; AF006619; AAC16402.11; --
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                               , U48829; AAB18620.1; -, S71597; AAB31028.2; -, L36063; AAC02242.1; -. JC1472; JC1472;
                 EMBL; D14051; BAA03138.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Conservative
                                                                                                                                                                                                                                                                993
1088
107
112
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
Best Local Similarity
                                                                                                                                 HSSP; P29477; 1NOC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     13;
                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                              CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                      CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
CONFLICT
CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
CONFLICT
CONFLICT
                                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                             CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CONFLICT
                                                                                                                                                                                                                                                                                                 CONFLICT
                                                                                                                                                                                                                                                                                                        CONFLICT
                                                                         EMBL;
EMBL;
                                                 EMBL;
                                                                EMBL;
                                                         EMBL;
                                                                                          EMBL;
                                                                                                EMBL;
                                                                                                          EMBL;
                                                                                                                 EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
```

```
NESD_HUMAN

NESD_H
```

us-08-833-506c-32.rsp

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (see http://www.isb-sib.ch/announce/or send an email to license@lb.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               HIV-induced central nervous system disease.";
Mai. Med. 2:27-37(1996).
-!- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. INDS AND NO MAY CONTRIBUTE TO SIMIAN IMMUNOBELICIENCY VIRUS (SIV)-INDUCED CENTRAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          NERVOUS SYSTEM DISEASE.

CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE +
NITRIC OXIDE + N NADP(+).
                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Lane T.E., Buchmeler M.J., Watry D.D., Fox H.S., "Expression of inflammatory cytokines and inducible nitric oxide synthase in brains of SIV-infected rhesus monkeys: applications to
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Primates; Catarrhini; Cercopithecidae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE II)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        THE ENZYME (BY SIMILARITÝ).
-i- ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN (BY
                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                              Length 1147;
N -> S (IN AAC83554).
D -> A (IN AAC83554).
G -> E (IN AAC83554).
P -> Q (IN AAC83554).
A -> T (IN AAC83554).
TL -> N (IN AAC83554).
E -> K (IN AAC83554).
I -> L (IN AAC83554).
F -> V (IN AAC83554).
F -> V (IN AAC83554).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Oxidoreductase; NADP; FAD; FWN; Calmodulin-binding; Heme; Multigene family.
                                                                                                                                                                                                                                                                                                                                                                                                                                   5; Indels
                                                                                                                                                                                                                                                                                                                                                                        Score 68; DB 1;
Pred. No. 0.0048;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               162 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                      Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         -1- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SIMILARITY).
SUBUNIT: HOMODIMER (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           INDUCTION: BY LIPOPOLYSACCHARIDES
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               PRT;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          TISSUE-Microglia;
MEDLINE-97056192; PubMed-8900532;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (INDUCIBLE NOS) (INOS) (FRAGMENT)
                                                                                                                                                                                                                                                                                           .
Μ¥.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Macaca mulatta (Rhesus macaque).
                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
                                                                                                                                                                                                                                                                                                                                                                        74.78;
72.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         EMBL; U31907; AAC39525.1; -. HSSP; P29477; INOC.
                                                                                                                                                                                                                                                                                        AA; 130528
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         25 NNNVEKTPGAIPSPTTQD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                   Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Cercopithecinae; Macaca.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            1 NNNVEKAPSATSSPVTQD
                                                                                                                      731
937
1009
1024
1076
                                                                                                                                                                                                                                                              1129
                                                                                                                                                                                                                                                                                                                                           Ouery Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=9544;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOS2_MACMU
046660;
  CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 NOS2_MACMU
     ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               WWW WE WANT TO COULD COU
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. MEDINE-9222944; PubMed=1373522; MEDINE-92229444; PubMed=1373522; Mumford R.A., Swiderek K.M., Xie Q.-W., Cho H.J., Calaycay J., Mumford R.A., Swiderek K.M., Le T.D., Ding A., Troso T., Nathan C.; "Cloning and characterization of inducible nitric oxide synthase from
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           MEDINE-92357701; Pubmed-1379716;
Lowenstein C.J., Glatt C.S., Bredt D.S., Snyder S.H.;
"Cloned and expressed macrophage nitric oxide synthase contrasts with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           STRAIN-DBA/2J, BALB/CBYJ, SJL/J, NOD/LTJ, AND B10.S/J; TISSUE-Spleen; Ma R.2., Teuscher C.;
Submitted (MAY-1998) to the EMBL/GenBank/DDBJ databases.
                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             MEDLINE-97477482; PubMed-9334294;
Crane B.R., Arvai A.S., Gachhui R., Wu C., Ghosh D.K., Getzoff E.D.,
Stuchr D.J., Tainer J.A.:
"The structure of nitric oxide synthase oxygenase domain and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-92210618; PubMed-1372907;
Lyons C.R., Orloff G.J., Cunningham J.M.;
"Molecular cloning and functional expression of an inducible nitric
oxide synthase from a murine macrophage cell line.";
J. Biol. Chem. 267:6370-6374(1992).
                                                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi;
Mammalia; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus.
NCBL_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Kone B.C., Schwoebel J., Turner P., Mohaupt M.G., Cangro C.B.; "Role of NF-kappa B in the regulation of inducible nitric oxide synthase in an MTAL cell line.";
                                                                                                                ..
O
                                                                                                                                                                                                                                                           NOS2_MOUSE STANDARD; PRT; 1144 AA.
P29477; O70515; O70516;
01-APR-1993 (Rel. 25, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
NITRIC OXIDE SYNTHASE, INDUCIBLE (EC 1.14.13.39) (NOS, TYPE (INDUCIBLE NOS) (INOS) (MAC-NOS).
                                                                              Score 65; DB 1; Length 162;
Pred. No. 0.0016;
1; Mismatches . 3; Indels
                                0457464D32287065 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Proc. Natl. Acad. Sci. U.S.A. 89:6711-6715(1992).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              X-RAY CRYSTALLOGRAPHY (2.35 ANGSTROMS) OF 77-496.
MEDLINE-20031637; PubMed-10562538;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 116-496.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Am. J. Physiol. 269:F718-F729(1995).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                MEDLINE=96088781; PubMed=7503239;
                                17813 MW;
                                                                                71.48;
77.88;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             inhibitor complexes.";
Science 278:425-431(1997).
                                                                                                                                               1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                  Science 256:225-228(1992).
                                                                                                               Conservative
               162
                                                                                                                                                                                                                                                                                                                                                                                                  Mus musculus (Mouse)
   1
162 1
162 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                the brain enzyme.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                               Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 mouse macrophages
                                                                                   Local Sim
NON_TER
NON_TER
SEQUENCE
                                                                                Query Match
                                                                                                                                                                                                                               RESULT 5
NOS2_MOUSE
                                                                                                 Best Loca
Matches
                                                                                                                                                                              pp
                                                                                                                                                                                                                                                                             FT
                                                                                                                                                 ò
```

```
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ALS3_CANAL
     DOR NOOR SET THE FET T
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a licensee agreement (see http://www.isb-sib.ch/announce/or send an email to licenseelab-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Proc. Natl. Acad. Sci. U.S.A. 92:7926-7930(1995).

-1- FUNCTION: PRODUCES NITRIC OXIDE (NO) WHICH IS A MESSENGER MOLECULE WITH DIVERSE FUNCTIONS THROUGHOUT THE BODY. IN MACROPHAGES, NO MEDIAPES TUNORICIDAL AND BACTERICIDAL ACTIONS.

-1- CATALYTIC ACTIVITY: L-ARGININE + N NADPH + M O(2) = CITRULLINE + NITRIC OXIDE + N NADPH + M O(2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ENZYME REGULATION: NOT STIMULATED BY CALCIUM/CALMODULIN. ASPIRIN HINHERTS EXPRESSION AND FUNCTION OF THIS ENZYME AND EFFECTS MAY BE EXERTED AT THE LEVEL OF TRANSLATIONAL/POSTTRANSLATIONAL MODIFICATION AND DIRECTLY ON THE CATALYTIC ACTIVITY.
Ghosh D.K., Crane B.R., Ghosh S., Wolan D., Gachhui R., Crooks C., Presta A., Tainer J.A., Getzoff E.D., Stuehr D.J.; "Inducible nitric oxide synthase: role of the N-terminal beta-hairpin hook and pterin-binding segment in dimerization and tetrahydrobiopterin interaction."; EMBO J. 18:6260-6270(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Amin A.R., Vyas P., Attur M., Leszczynska-Piziak J., Patel I.R., Welssmann G., Abramson S.B.; "The mode of action of aspirin-like drugs: effect on inducible nitric
                                                                                                                                                                               X-RAY CRYSTALLOGRAPHY (2.6 ANGSTROMS) OF 77-496.
MEDLINE-98182450; PubMed~9516116;
Crane B.R., Arvai A.S., Ghosh D.K., Wu C., Getzoff E.D., Stuehr D.J.,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           -!- COFACTOR: HEME. BINDS ONE MOLE EACH OF FAD AND FMN. ALSO REQUIRES TETRAHYDROBIOPTERIN (BH4) WHICH MAY STABILIZE THE DIMERIC FORM OF
                                                                                                                                                                                                                                                                          Structure of nitric oxide synthase oxygenase dimer with pterin and ubstrate ^{\prime\prime}:
                                                                                                                                                                                                                                                                                                                                                                                 X-RAY CRYSTALLOGRAPHY (2.35 ANGSTROMS) OF 77-499.
MEDLINE-20031638; PubMed-10562539;
Cane B.R., Rosenfeld R.J., Arval A.S., Ghosh D.K., Ghosh S.,
Tainer J.A., Stuehr D.J., Getzoff E.D.;
"N-terminal domain swapping and metal ion binding in nitric oxide
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     -1- SUBUNIT: HOMODIMER.
-1- TISSUE SPECIFICITY: MACROPHAGES.
-1- INDUCTION: BY TREATMENT WITH ENDOTOXINS OR CYTOKINES.
-1- SIMILARITY: BELONGS TO THE NOS FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AF065921; AAC17916.2; -. AF065922; AAC17917.1; ALT_INIT. AF065923; AAC17918.2; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               M92649; -; NOT_ANNOTATED_CDS.
M84373; AAA39834.1; -
U43428; AAC52356.1; -
AF065919; AAC17914.1; -.
AF065920; AAC17915.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    TISSUE≏Macrophage;
MEDLINE≃95372392; PubMed⊶7544010;
                                                                                                                                                                                                                                                                                                                                  Science 279:2121-2126(1998).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; M87039; AAA39315.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EMBO J. 18:6271-6281(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    synthase dimerization.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    18-NOV-98.
18-NOV-98.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               23-MAR-99.
23-MAR-99.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A43271; A43271.
A42166; A42166.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            NOC; 18-NOV-98
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    23-MAR-99
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            EFFECT OF ASPIRIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           oxide synthase.";
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                THE ENZYME
                                                                                                                                                                                                                                                               Painer J.A.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               2NOD;
3NOD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            2NOS;
1NOD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1NOS;
                                                                                                                                                                                                                                                                                                               substrate
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL;
EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       EMBL:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    EMBL;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            PIR;
PIR;
PDB;
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  CALMODULIN-BINDING (POTENTIAL).
FWN (PYRIMIDINE PART) (BY SIMILARITY).
FAD (ADP PART) (BY SIMILARITY).
FAD (FLAVIN PART) (BY SIMILARITY).
NADP (RIBOSE PART) (BY SIMILARITY).
NADP (ADP PART) (BY SIMILARITY).
ZINC.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Hoyer L.L., Payne T.L., Bell M., Myers A.M., Scherer S.; "Candida albicans ALS3 and insights into the nature of the ALS gene
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota; Fungi; Ascomycota; Saccharomycotina; Saccharomycetes; Saccharomycetales; mitosporic Saccharomycetales; Candida. NCBL_TaxID=5476;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        family.";

Curr. Genet. 33:451-459(1998).

-!- FUNCTION: MAY PLAY A ROLE IN ADHESION AND PATHOGENESIS.

-!- FUNCTION: MAY PLAY A ROLE IN ADHESION AND PATHOGENESIS.

-!- FUNCTION: MAY PLAY A ROLE IN ADHESION AND PATHOGENESIS.

-!- FUNCTION: MAY PLAY A ROLE IN ADHESION AND PATHOGENESIS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 57; DB 1; Length 1144; Pred. No. 0.27;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 N STRAIN NOD/LTJ).
N STRAIN SJL/J).
N STRAIN BALB/CBYJ).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              C -> R (IN STRAIN NOD/LLJ).
P -> L (IN STRAIN SJL/J).
S -> E (IN STRAIN BALB/CBVJ).
K -> T (IN REF. 4).
A -> V (IN REF. 2).
A -> G (IN REF. 2).
A -> G (IN REF. 2).
                                                                                                                                                                                                                                                                                                                                                                                                                                                           Oxidoreductase; NADP; FAD; FWN; Calmodulin-binding; Heme; Zinc; Metal-binding; Multigene family; 3D-structure.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-JUL-1999 (Rel. 38, Created)
15-JUL-1999 (Rel. 38, Last sequence update)
15-JUL-1999 (Rel. 38, Last annotation update)
AGGLUTININ-LIKE PROTEIN 3 PRECURSOR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      PRT; 1119 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HEME.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     MEDLINE-98309840; PubMed-9644209;
                                                                                                                                                                                                                                                                                                                                        Pfam; PF00667; FAD_binding; 1.
Pfam; PF00175; oxidored_fad; 1.
                                                                                                                                                                                                                                                                                                                                                                                                     PRINTS; PR00369; FLAVODOXIN. PRINTS; PR00371; FPNCR.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                62.6%;
61.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       130574
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       25 NNNVKKTPCAVLSPTIQD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match
Best Local Similarity 61.17
Matches 11, Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Candida albicans (Yeast).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      STANDARD;
                                                                                                                                                                                                                                               Interpro; IPR001433; -. Interpro; IPR001709; -. Interpro; IPR003097; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              907
990
1085
104
                                                                                                                                                                                  MGD; MGI:97361; Nos2.
InterPro; IPR001094; -
                                                                                         1DWX; 06-FEB-00.
1QOM; 15-DEC-99.
1DD7; 29-MAR-00.
08-DEC-99.
04-FEB-00.
06-FEB-00.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1144 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               [1]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              194
503
617
761
761
1070
109
109
2211
199
191
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STRAIN .. 1161;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ALS3_CANAL
074623;
                                                                   DMM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        DOMAIN
NP_BIND
NP_BIND
NP_BIND
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           NP_BIND
METAL
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CONFLICT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              BINDING
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         HAD BE BELL HAD BELL
```

```
Plasmid.
SEQUENCE
                                                                                                                                                                                 RESULT 8
HBL1_CAEEL
                                                                                                                                 Matches
                                                                                                                                                           g
                                                                                                                                                                                              ð
                                                                                                                                                                                                                                                                                                           ;
0
entities requires a license agreement (See http://www.isb-sib.ch/announce/
or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                          MEDLINE-86114347; pubmed-3007931;
Brown N.L., Misra T.K., Winnie J.M., Schmidt A., Sieff M., Silver S.;
"The nucleotide sequence of the mercuric resistance operans of
plasmid R100 and transposon Th501: further evidence for mer genes
which enhance the activity of the mercuric ion detoxification
                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                            (POTENTIAL)
                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                       (POTENTIAL)
                                                                                                                                                                                                                   (POTENTIAL)
                                                                                                                                                                                                                                (POTENTIAL)
                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                         (POTENTIAL)
                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                              (POTENTIAL)
                                                                                                                                                                                                                                                     (POTENTIAL)
                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                    Bacteria; Proteobacteria; gamma subdivision; Pseudomonadaceae;
                                                                                                                                                                                                                                                                                            Score 54; DB 1; Length 1119; Pred. No. 0.79;
                                                                                                                                                                                                                                                                                                           Indels
                                                                                                                                                                                                                                                                        6A3FB3FC8C879A71 CRC64;
                                        AGGLUTININ-LIKE PROTEIN 3.
10 X 36 AA TANDEM REPEATS.
                                                                                                                                                                                                                                       (GLCNAC. . .)
                                                                                                                                                                                                                  (GLCNAC.
                                                                                                                                                                                                                                (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                    01-JAN-1988 (Rel. 06, Created)
01-JAN-1988 (Rel. 06, Last sequence update)
01-CT-1989 (Rel. 12, Last annotation update)
HYPOTHETICAL MERCURIC RESISTANCE PROTEIN MERE.
                                                                                                                                                                                                            (GLCNAC
                                                                                                                                                                                                                                                   (GLCNAC
                                                                                                                                                                                                                                                           (GLCNAC
                                                                                                                                                                                                     (GLCNAC
                                                                                                                                                                                                                                             (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                       78 AA.
                            Repeat; Signal
                                                                                                                                                                                                                                                                                                           Mismatches
                                   POTENTIAL.
                                                                                                                                                                                             N-LINKED (N-LINKED (N-LINKED)
                                                                                                                                                                                                                 N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                  POLY-THR.
POLY-THR.
POLY-THR.
POLY-THR.
                                                                                                                                                    POLY-THR.
POLY-THR.
                                                                                                                                                                                                                                             N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                 N-LINKED
                                                                                                                                                                                                                                                           N-LINKED
                                                                                                                                             POLY-THR
                                                                                                                         POLY-THR
                                                            11-2.
11-5.
11-6.
11-8.
                           Cell adhesion; Glycoprotein;
                                                                                                                                                                                                                                                                       119927
                                                                                                                                                                                                                                                                                            59.3%;
75.0%;
                                                                                                                                                                                                                                                                                                                               1029 NNGGGKAPSATSSPST 1044
                                                                                                                                                                                                                                                                                      EMBL; U87956; AAC39486.1;
                                                                                                                                                                                                                                                                                                                        1 NNNVEKAPSATSSPVT 16
                                                                                                                                                                                                                                                                                                                                                                       STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                       Pseudomonas aeruginosa.
                                                                                                                                                          671
707
743
777
1047
                                                                                                                                                                                                                                                                 .061
                                                                                                                                                                                                                                                                          AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      TRANSPOSON-TD501
                                                                                                                                                                                                                                                                                                                                                                                                                                                 NCBI_TaxID=287;
                                                                                                                                                                                                                                                                                                                                                                      MERE_PSEAE
P06690;
                                                                                                                                                                                                                                                                                                                                                                                                                             Plasmid pvs1
                                                                                                                                                                                                                                                                                                                                                                                                                                            Pseudomonas
                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                            CARBOHYD
                                                                                                                                                                                                                  CARBOHYD
                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                CARBOHYD
                                                                                                                                                                                                                                       CARBOHYD
                                                                                                                                                                                                                                                                        SEQUENCE
                                                                                                                                                                                              CARBOHYD
                                                            REPEAT
REPEAT
                                                                         REPEAT
REPEAT
                                               DOMAIN
                                                                                                           REPEAT
                                                                                                                                                                         DOMAIN
                                                                                                                                                                                 DOMAIN
                                  SIGNAL
                                                                                                                          DOMAIN
                                                                                                                                 DOMAIN
                                                                                                                                       DOMAIN
                                                                                                                                               DOMAIN
                                                                                                                                                    DOMAIN
                                                                                                                                                            DOMAIN
                                                                                                                                                                   DOMAIN
                                                                                                                                                                                       DOMAIN
                                                      REPEAT
                                                                                        REPEAT
                                                                                              REPEAT
                                                                                                     REPEAT
                                                                                                                   REPEAT
                                                                                                                                                                                                                                                                                                                                                                 MERE_PSEAE
                                                                                                                                                                                                                                                                                                                                                          RESULT
                                                                                                                                                                                                                                                                                                                                    g
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bloinformatics and the EMBL outstation the European Bloinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                            This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lib-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          -!- FUNCTION: REQUIRED FOR LATE STAGES OF DEVELOPMENT.
-!- SUBCELLULAR LOCATION: NUCLEAR (PROBABLE).
-!- TISSUE SPECIFICITY: EXPRESSED PRIMARILY IN ECTODERMAL CELLS DURING EMBRYONIC AND LARVAL DEVELOPMENT.
-!- SIMILARITY: BELONGS TO THE HUNCHBACK FAMILY OF C2H2-TYPE ZINC-FINGER PROTEINS.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                STRAIN=BRISTOL N2;
MEDLINE=99117349; PubMed=9917360;
Fay D.S., Stanley H.M., Han M., Wood W.B.;
"A Caenorhabditis elegans homologue of hunchback is required for late stages of development but not early embryonic patterning.";
Dev. Biol. 205:240-253(1999).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Eukaryota, Metazoa, Nematoda, Chromadorea, Rhabditida, Rhabditoldea,
Rhabditidae, Peloderinae, Caenorhabditis.
                                                                                                                                                                                                                                                                                                                                                                                                            Mercuric resistance; Hypothetical protein; Transposable element;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Length 78;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Fulton L.; Submitted (SEP-1999) to the EMBL/GenBank/DDBJ databases.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   E1EF23E690CF115D CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 45; DB 1;
Pred. No. 1.1;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                HBL1_CAEEL STANDARD; PRT; 982 AA. 09XYD3; 019389; 01-0cT-2000 (Rel. 40, Created) 01-0cT-2000 (Rel. 40, Last sequence update) 01-0cT-2000 (Rel. 40, Last annotation update) HUNCHBACK-LIKE PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; U40939; AAA81701.2; ALT_INIT.
WORMPEP; F13D11.2; CE23646.
INGLEFIPO; IPRO00822; --
PF00096; zf-C2H2; 9.
PROSITE; PS00028; ZINC_FINGER_C2H2_1; 3.
system.";
Mol. Gen. Genet. 202:143-151(1986).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              EMBL; AF097737; AAD16170.1; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       49.5%;
53.3%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   8410 MW;
                                                                                                                                                                                                                                                                                                                                                                                EMBL; 200027; CAA77325.1; -
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 | |: || |:|| 2 NNPERLPSETHKPIT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          2 NNVEKAPSATSSPVT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   78 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              HBL-1 OR F13D11.2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    NCBI_TaxID=6239;
```

```
ACT_SITE CONFLICT
                                                                                                                                                                                                                                                                                   TEGU_EBV
P03186;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE
                                                                          NP_BIND
BINDING
                                                                                                                                SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            11
                                                                                                                                                                                                                                                                          TEGU_EBV
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            RESULT
  ολ
                                                                                                                                                                                                                               g
                                                                                                                                                                                                                                                                                                ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lsb-sib.ch).
                                                                                                                                                                                      ï
                                                                                                                                                                                      Gaps
ZINC_FINGER_C2H2_2; 4.
:ein; Gap; Zinc-finger; Metal-binding; DNA-binding;
                                                                                                                                                                                                                                                                                                                                                                                                                                                  Samejima I., Yanagida M.; Indentification of cut8+ and cek1+, a novel protein kinase gene, aldentification of cut8+ and cek1+, a novel protein kinase gene, which complement a fission yeast mutation that blocks anaphase."; Mol. Cell. Biol. 14:6361-6371(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Lyne M., Rajandream M.A., Barrell B.G., Volckaert G.;
Submitted (MAR-1999) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: MAY FACILITATE THE PROGRESSION OF RNAPHASE THROUGH
DIRECT OR INDIRECT INTERACTION WITH THE CUTS PROTEIN.
-!- SIMILARITY: WITH THE CONSERVED CATALYTIC DOMAINS OF SER/THR-
PROTEIN KINASES. STRONG, TO YEAST RIM15.
                                                                                                                                                                                      4
                                                                                                                                                                1; Length 982,
                                                                                                                                                                                     3; Indels
                                                                                                                               49812554CF3CE30F CRC64;
                                                                                                                                                                                                                                                                                                                                                                         Eukaryota; Fungi; Ascomycota; Schizosaccharomycetes; Schizosaccharomycetales; Schizosaccharomycetaceae;
                                                                                                                                                                                                                                                                                  CEKI_SCHPO STANDARD; PRT; 1338 AA. P88938 , O9Y7N8; P. Created) 01-EB-1995 (Rel. 40, Last sequence update) 01-OCT-2000 (Rel. 40, Last annotation update) PROTEIN KINASE CEKI (EC 2.7.1.-). Schizosaccharomyces pombe (Fission yeast).
                                                                                                                                                                48.4%; Score 44; DB 55.0%; Pred. No. 27;
                                                                                                                                                                                      Mismatches
                              C2H2-TYPE.
C2H2-TYPE.
C2H2-TYPE.
C2H2-TYPE.
C2H2-TYPE.
C2H2-TYPE.
C2H2-TYPE.
C2H2-TYPE.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Samejima I., Yanagida M.;
Mol. Cell. Biol. 14:7683-7683(1994).
                                                                                                                                                                                                                                                                                                                                                                                                                             SEQUENCE FROM N.A. MEDLINE-94344146; PubMed-8065367;
                                                                                                                                 106951 MW;
                                                                                                                                                                                                                       289 NNNNEEAPASTVSACSTPTT 308
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL; D31773; BAA06551.1; -. EMBL; AL049559; CAB40178.1; -
                                                                                                                                                                                                          16
                                                                                                                                                                                                          1 NNNVEKAP----SATSSPVT
                                                                                                                                                                Query Match 48.4
Best Local Similarity 55.0
Matches 11; Conservative
                      protein.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           HSSP; P00517; ISTC.
InterPro; IPR000719; -.
InterPro; IPR000961; -.
InterPro; IPR002290; -.
PS50157; ZINC_
ental protein;
                                  358
384
560
589
617
647
647
647
                                336
361
567
583
623
734
923
957
982 AA;
                                                                                                                                                                                                                                                                                                                                                                                              Schizosaccharomyces.
NCBI_TaxID=4896;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  SEQUENCE FROM N.A.
                      Nuclear
             Developmental
                     Repeat; N
ZN_FING
  PROSITE;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ERRATUM.
                                                                                                                                                                                                                                                               RESULT 9
CEK1_SCHPO
  ò
                                                                                                                                                                                                                               a
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@lib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 ö
                                                                                                                                                                                                              603 ATP (BY SIMILARITY).
618 ATP (BY SIMILARITY).
713 BY SIMILARITY.
1338 FVICEDETCIPTDLOSDGVLLKPITCENIESCLRKLDVWH
A4, 149896 WW; 755DD0A13D3D2762 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            MEDLINE-8427067; PubMed-6087149; MEDLINE-84270667; PubMed-6087149; Baer R., Bankier A.T., Biggin M.D., Deininger P.L., Farrell P.J., Baer R., Barkell G., Hudson G.S., Satchwell S.C., Seguin C., Tuffnell P.S., Barrell B.G., Tuffnell P.S., Barrell B.G., Box sequence and expression of the B95-8 Epstein-Barr virus genome."; Nature 310:207-211(1984).

-i. FUNCTION: TEGUMENT PROTEIN.
-i. SIMILARITY: BELONGS TO FAMILY THAT GROUPS TOGETHER HSV-1 UL36, EHV-1 24, EBV BPLF1, HVS-1 64, VZV 22, AND HCMV UL48.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
Pfam; PF00069; pkinase; 2.
Pfam; PF0043; pkinase_C; 1.
PROSITE; PS00107; PROTEIN_KINASE_ATP; FALSE_NEG.
PROSITE; PS00108; PROTEIN_KINASE_ST; 1.
PROSITE; PS50011; PROTEIN_KINASE_DOM; 1.
"TANAFE_DOM; 1.
"TANAFETASE; Serine, Threonine-protein kinase; ATP-binding."
"TANAFETASE; Serine, Threonine-protein Kinase; ATP-binding."
"TANAFETASE; Serine, TANAFETASE."
"TANAFETASE"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 3149;
                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1338,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Epstein-barr virus (strain B95-8) (Human herpesvirus 4).
Viruses; dsDNA viruses, no RNA stage; Herpesviridae;
Gammaherpesvirinae; Lymphocryptovirus.
NCBI_TaxID=10377;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  3; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   3149 AA; 337954 MW; 3DD0C576587313D8 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                            Score 44; DB 1;
Pred. No. 38;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 44; DB 1;
Pred. No. 98;
5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (Rel. 01, Last sequence update) (Rel. 25, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  PRT; 3149 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (Rel. 01, Created)
(Rel. 01, Last seq
                                                                                                                                                                                                                                                                                                                                                                                                                               48.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; V01555; CAA24839.1; -. PIR; A03747; QQBE8. PIR; S32993; S32993.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 48.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         44.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               :|::| || :|| || 699 SNSLESGSSAPTSPITLD 716
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                    Ouery Match
Best Local Similarity 45...
7; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |: | :||:|| :|
814 NSAEDSPTATNTPTSQ 829
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  2 NNVEKAPSATSSPVTQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           LARGE TEGUMENT PROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Query Match
Best Local Similarity
'has 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                    1338
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                21-JUL-1986
21-JUL-1986
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      01-APR-1993
```

σ

```
between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                This SWISS-PROT entry is copyright. It is produced through a collaboration
                                                                                                                                                                    Sanchez A., Trappier S.G., Mahy B.W.J., Peters C.J., Nichol S.T.; "The virion glycoproteins of Ebola viruses are encoded in two reading frames and are expressed through transcriptional editing."; proc. Natl. Acad. Sci. 0.5.A. 93:3602-3607(1996).
                                                                                             Ebola virus (strain Reston) (Ebo).
Viruses; ssRNA negative-strand viruses; Mononegavirales; Filoviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Transmembrane; Envelope protein; Glycoprotein; Signal; RNA editing. SIGNAL 33 POTENTIAL. STRUCTURAL GLYCOPROTEIN.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: BELONGS TO THE FILOVIRUSES GLYCOPROTEIN FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (POTENTIAL)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (POTENTIAL)
                          30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
30-MAY-2000 (Rel. 40, Last annotation update)
STRUCTURAL GLYCOPROFIN PRECURSOR (VIRION SPIKE GLYCOPROTEIN)
[CONTAINS: GP1; GP2].
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EXTRACELLULAR (POTENTIAL). POTENTIAL.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CYTOPLASMIC (POTENTIAL). BY SIMILARITY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GLCNAC. . .)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   (GLCNAC
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             (GLCNAC
           677 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      N-LINKED
N-LINKED
N-LINKED
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              N-LINKED
           PRT;
                                                                                                                                                           MEDLINE-96195018; PubMed-8622982;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL, U23152; AAC54865.1; -.
EMBL, AF034645; AAC24346.1; -.
InterPro; IPR002561; -.
Pfam; PF01611; Filo_glycop; 1.
           STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        502
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               650
673
677
609
                                                                                                                          NCBI_TaxID=129003;
                                                                                                                                                 SEQUENCE FROM N.A.
                                                                                                                                                                                                                          SEQUENCE FROM N.A.
          VGP_EBORE
Q66799;
                                                                                                                  Filovirus.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DOMAIN
DISULFID
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           FRANSMEM
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      CHAIN
VGP_EBORE
```

```
MEDLINE-96195018; Pubbad-8622982;
Sanchez A., Trappier S.G., Mahy B.W.J., Peters C.J., Nichol S.T.;
Sanchez A., Trappier S.G., Mahy B.W.J., Peters C.J., Nichol S.T.;
Sanchez A., Trappier S.G., Mahy B.W.J., Peters C.J., Nichol S.T.;
The virion glycoproteins of Ebola viruses are encoded in two reading
Trames and are expressed through transcriptional editing.";
Proc. Natl. Acad. Sci. U. S.A. 93:3602-3607(1996).
If Proc. Natl. Acad. Sci. U. S.A. 93:3602-3607(1996).
C. I- FUNCTION: STRUCTURAL PROTEIN THAT FORMS THE VIRION SPIKE AND WHICH
IS RESPONSIBLE FOR BINDING TO TARGET CELLS AND SUBSEQUENT FUSION
C. I- SUBUNIT. HOWOTRIMER; EACH WOOMER CONSIST OF A GP1 AND A GP2
SUBCELLULAR LOCATION: TYPE I MEMBRANE PROTEIN. GP1 CAN ALSO BE
SHED BY THE VIRUS AFTER PROTEOLYTIC PROCESSING (BY SIMILARITY).
C. I- SUBCELLULAR LOCATION: TYPE I MEMBRANE BROTEIN GBY SIMILARITY).
C. I- PTM: N-GLYCOSYLAFED, COULD ALSO BE O-GLYCOSYLAFED (BY SIMILARITY).
C. I- PTM: N-GLYCOSYLAFED, COULD ALSO BE O-GLYCOSYLAFED (BY SIMILARITY).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    MISCELLANEOUS: THE FULL-LENGTH GLYCOPROTEIN IS SYNTHESIZED AS A RESULT OF RNA EDITING, AN ADDITIONAL A RESIDUE IS INSERTED DURING TRANSCRIPTION. WITHOUT RNA-EDITING, A SMALL GLYCOPROTEIN (SGP) IS
                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Ebola virus (strain Reston Siena/Philippine-92) (Ebo).
Viruses; ssRNA negative-strand viruses; Mononegavirales; Filoviridae;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               EMBL; U2341b; AND CONTROL OF THE CONTROL OF TRANSMEN END CONTROL OF TRANSMEN END CONTROL OF TRANSMEN END CHAIN STATEMENT OF TRANSMEN END CHAIN SON END CONTROL OF TRANSMEN END CONTROL OF TRANSMENTER OF TRANS
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL)
N-LINKED (GLCNAC. . .) (POTENTIAL).
N-LINKED (GLCNAC. . .) (POTENTIAL).
3D22C37CP856F8BA CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           SIMILARITY: BELONGS TO THE FILOVIRUSES GLYCOPROTEIN FAMILY.
                                                                                                                                                                                                                                                                              5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           30-MAY-2000 (Rel. 39, Created)
30-MAY-2000 (Rel. 39, Last sequence update)
01-OCT-2000 (Rel. 40, Last annotation update)
STRUCTURAL GLYCOPROTEIN PRECURSOR (VIRION SPIKE GLYCOPROTEIN)
[CONTAINS: GP1; GP2].
                                                                                                                                                                                                                  Length 677;
                                                                                                                                                                                                                                                                              4.
                                                                                                                                                                                                                  DB 1;
                                                                                                                                                                                                               Score 43.5; I
Pred. No. 21;
                                                                                                                                                                                                                                                                              5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                         1 NNNVEK-----APSATSSPVTQD 18
                                                                                                                                Σ
                                                                                                                                                                                                                  47.8%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   EMBL; U23417; AAC54891.1; -.
   435
463
564
619
74432 1
                                                                                                                                                                                                                                                                              9; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         STANDARD;
   435
463
564
619
677 AA;
                                                                                                                                                                                                                  Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       NCBI_TaxID=129004;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SIMILARITY)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VGP_EBORS
Q89853;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Filovirus.
                            CARBOHYD
CARBOHYD
CARBOHYD
SEQUENCE
      CARBOHYD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 RESULT 12
                                                                                                                                                                                                                                                                           Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          VGP_EBORS
      FFF
                                                                                                                                                                                                                                                                                                                                                                                                  pp
```

us-08-833-506c-32.rsp

```
VARIANT
VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT
VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                          VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                   VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                     VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                            VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        VARIANT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  VARIANT
                                                                                                                                                                                                                                                                                                                                            REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                               REPEAT
REPEAT
                                                                                                                                                                                                                                                                                                                                                                                                  VARIANT
                                                                                                                                                                                                                                                                                                                                                              REPEAT
                                                                                                                                                                                                                                                                                                                                                                       REPEAT
                                                                                                                                                                                                                                                                                                                                    REPEAT
 ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAIN-129/SV;
MEDLINE-9738491; PubMed-9242436;
MEDLINE-9738491; PubMed-9242436;
MCALLISter K.A., Haugen-Strano A., Hagevik S., Brownlee H.A.,
Collins N.K., Futreal P.A., Bennett L.M., Wiseman R.W.;
"Characterization of the rat and mouse homologues of the BRCA2 breast cancer susceptibility gene."
Cancer Res. 57:3121-3125(1997).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        SEQUENCE OF 18-200 FROM N.A.
MEDLINE-97075121; PubMed-8917547;
Rajan J.V., Wang M., Marquis S.T., Chodosh L.A.;
"Brcaz is coordinately regulated with Brcal during proliferation and differentiation in mammary epithelial cells.";
Proc. Natl. Acad. Sci. U.S.A. 93:13078-13083(1996).
                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                         Connor F., Smith A., Wooster R., Stratton M., Dixon A., Campbell E. Tait T.M., Freeman T., Ashworth A.; "Cloning, chromosomal mapping and expression pattern of the mouse
                                                                                                                                                                                                                                                                                                                                     Eukaryota; Metazoa; Chordata; Craniata; Vertebrata; Euteleostomi; Mammalla; Eutheria; Rodentia; Sciurognathi; Muridae; Murinae; Mus. NCBI_TaxID=10090;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-97237041; PubMed-9119389;
Sharen S.K., Bradley A.;
"Murlne Brca2: sequence, map position, and expression pattern.";
Genomics 40:234-241(1997).
                                           (POTENTIAL).
(POTENTIAL).
(POTENTIAL).
                                                                      (POTENTIAL)
                                   (POTENTIAL)
                                                                                        (POTENTIAL)
                                                                                                (POTENTIAL)
                                                                                                          (POTENTIAL)
                                                                                                                 (POTENTIAL)
                                                                                                                                    (POTENTIAL)
                                                                                                                                                                                       5,
                                                                                                                                                                       DB 1; Length 677;
                                                                                                                                                                                        Indels
                                                                                                                                          DA9770A7BAFED9BD CRC64;
                                                                                                                                                                                         4;
                 (GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
(GLCNAC.
       N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
N-LINKED (GLCNAC.
                                                                                                (GLCNAC.
                                                                                                                                                                                                                                                          DE BREAST CANCER TARDARD; PRT; 3329 AA.

1D BRC2_MOUSE STANDARD; PRT; 3329 AA.

AC P97929; P97383; 035922;

DT 15-DEC-1998 (Rel. 37, Created)

DT 15-DEC-1998 (Rel. 37, Last sequence update)

DT 01-OCT-2000 (Rel. 40, Last annotation update)

DE BREAST CANCER TYPE 2 SUSCEPTIBILITY PROTEIN.
                                                                                                                                                                      Score 43.5; DB Pred. No. 21; 5; Mismatches
 SIMILARITY
                                                                                                                                                                                                                                                                                                                                                                                               MEDLINE-97217789; PubMed-9063750;
                                                                                                                                                                                                                                                                                                                                                                                                                                            Hum. Mol. Genet. 6:291-300(1997)
                                                                                                                                                                                                                   1 NNNVEK-----APSATSSPVTQD 18
                                                                                                                                            MW;
                                                                                                                                                                      Query Match
Best Local Similarity 39.1%;
Matches 9; Conservative 5
                                                                                                                                           74523
Mus musculus (Mouse)
602
41
2039
2239
2258
2269
2317
3318
3318
406
420
435
463
564
619
                                                                                                                                                                                                                                                                                                                                                                                                                                                               SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    [3]
SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                        STRAIN-C57BL/6;
                                                                                                                                                                                                                                                                                                                                                                                                                                     Brca2 gene.
                                                                                                                                                                                                                                                                                                                                                                                         STRAIN-129;
                                  CARBOHYD
CARBOHYD
CARBOHYD
CARBOHYD
                                                                     CARBOHYD
CARBOHYD
CARBOHYD
                                                                                                CARBOHYD
CARBOHYD
         CARBOHYD
CARBOHYD
                                                                                                                 CARBOHYD
CARBOHYD
                                                                                                                                   CARBOHYD
SEQUENCE
DISULFID
                           CARBOHYD
                                                                                                                                                                                                                                                                                                                             BRCA2
ò
                                                                                                                                                                                                                          임
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@ilensib.ch).
[5]
SEQUENCE OF 569-625 FROM N.A.
MEDLINE-97341126; PubMed-9196008;
MCAllister K.A., Ramachandran S., Haugen-Strano A., Fiedorek F.T. Jr.,
                                                                                                                                                                                "Genetic mapping of the Brca2 breast cancer susceptibility gene on mouse chromosome 5.";

Mamm. Genome 8:340-341(1997).

-1- FUNCTION: MAY PARTICIPATE IN A PATHWAY ASSOCIATED WITH THE ACTIVATION OF DOUBLE-STRAND BREAK REPAIR AND/OR HOMOLOGOUS RECOMBINATION (BY SIMILARITY).

-1- SUBUNIT: INTERACTS WITH RAD51 (BY SIMILARITY).

-1- TISSUE SPECIFICITY: WIDELY EXPRESSED. HIGHEST EXPRESSION IN CERBELLUM, TESTIS, ILEUM, APPENDIX, EPIDYMIS, OVARY AND MAMMARY GLAND. NO EXPRESSION IN LUNG.

-1- DEVELOPMENTAL STRAGE: IN THE MAMMARY GLAND, EXPRESSION INCREASES DRAMATICALLY DURING PREGNANCY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   STRAINS C57BL/6 AND 129/SV).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          AND 129/SV)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            7 X 34 AA APPROXIMATE BRCA2 REPEATS.
BRCA2 1.
BRCA2 2.
BRCA2 3.
BRCA2 4.
BRCA2 5.
BRCA2 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      S -> F (IN STRAINS C57BL/6 AND N -> P (IN STRAIN 129/SV).
N -> H (IN STRAIN C57BL/6).
H -> P (IN STRAIN C57BL/6).
P -> H (IN STRAIN C57BL/6).
I -> U (IN STRAIN C57BL/6).
O -> P (IN STRAIN C57BL/6).
O -> P (IN STRAIN C57BL/6).
O -> P (IN STRAIN C57BL/6).
C -> W (IN STRAIN C57BL/6).
S -> F (IN STRAIN C57BL/6).
S -> F (IN STRAIN C57BL/6).
C -> M (IN STRAIN C57BL/6).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Pfam; PF00634; BRCA2_repeat; 7.
PROSITE; PS50138; BRCA2_REPEAT; 6.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      EMBL, U82270; AAB48306.1; -.
EMBL, U72947; AAB40720.1; -.
EMBL, U65594; AAC23702.1; -.
EMBL, U89652; AAB71377.1; -.
EMBL, W89503; AAC53276.1; -.
MGD, MGI:109337; Brca2.
InterPro; IPR002093; -.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             2038
1015
1226
1428
1525
1657
1958
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    739
11038
111395
111395
112395
112395
12395
12395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
13395
1339
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Repeat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2717
2729
2814
2827
2907
2929
3058
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1192
1394
1491
1623
1924
2004
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          038
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1198
1257
1392
1520
1583
1613
1686
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        799
881
894
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         2605
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         141
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Polymorphism;
```

```
ij
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the EMBL outstation-the Buropean Bioinformatics institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                                    STRAIN-BRISTOL N2;
MEDLINE-92350298; PubMed-1641037;
Hill R.J., Sternberg P.W.;
"The gene lin-3 encodes an inductive signal for vulval development in
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                        Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
K -> E (IN STRAIN C57BL/6).
T -> S (IN STRAIN C57BL/6).
DSPKW -> SQSQV (IN STRAIN C57BL/6).
A -> G (IN STRAIN 129/SV).
E -> K (IN STRAIN 129/SV).
PR -> P (IN STRAIN 129/SV).
R -> K (IN STRAIN 129/SV).
R -> K (IN STRAIN 129/SV).
                                                                                                                                                      5;
                                                                                                                           Score 43.5; DB 1; Length 3329;
Pred. No. 1.3e+02;
2; Mismatches 4; Indels 5;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Marchep: 758H1.4; CE18670.
InterPro: IPR000561; -
PR05TFE; PS00122; EGF_1: 1.
PR05TFE; PS01186; EGF_2: 1.
EGF-like domain; Growth factor; Transmembrane; Signal;
                                                                                                                                                                                                                                                                                           01-0cT-1993 (Rel. 27, Created)
01-0cT-1993 (Rel. 27, Last sequence update)
30-MAY-2000 (Rel. 39, Last annotation update)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                EMBL; X68070; CAA48207.1; -.
EMBL; Z68760; CAA92997.1; -.
EMBL; AL032641; CAA92997.1; JOINED.
EMBL; AL032641; CAA21649.1; -.
EMBL; Z68760; CAA21649.1; -.
PIR; S28263; S28263.
                                                                                                                                                                                           1604 NNVEKNPRICCICQSSYPVTED 1625
                                                                                                                                                                              2 NNVEKAP----SATSSPVTQD 18
 3081
3089
3109
3220
3238
3243
3245
                                                                                                                             47.8%;
                                                                                                                                                                                                                                                                                                                                  LIN-3 PROTEIN PRECURSOR.
LIN-3 OR LET-94 OR F36H1.4.
Caenorhabditis elegans.
                                                                                                                          Query Match 47.8%
Best Local Similarity 50.0%
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        C. elegans.";
Nature 358:470-476(1992).
                                                                                                                                                                                                                                                                     STANDARD;
 3081 3083 3089 3089 3105 3208 3220 3228 3238 3238 3242 3242 3245 33245 33245 33245 3329 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Alternative splicing
                                                                                                                                                                                                                                                                                                                                                                                                                           SEQUENCE FROM N.A.
                                                                                                                                                                                                                                                                                                                                                                                                  NCBI_TaxID=6239;
                                                                                                                                                                                                                                                     LIN3_CAEEL
ID LIN3_CAEEL
AC Q03345;
                         VARIANT
VARIANT
VARIANT
VARIANT
SEQUENCE
 VARIANT
VARIANT
                                                                                                                                                                                                     q
  FTTFTF
                                                                                                                                                                               ò
```

```
This SWISS-PROT entry is copyright. It is produced through a collaboration between the Swiss Institute of Bioinformatics and the BNBL outstation the European Bioinformatics Institute. There are no restrictions on its use by non-profit institutions as long as its content is in no way modified and this statement is not removed. Usage by and for commercial entities requires a license agreement (See http://www.isb-sib.ch/announce/or send an email to license@isb-sib.ch).
                                                                                                                                                                                                                                                                                                                                                                                                                        ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ï
                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 SUBMITTED (JUL-1995) to the EMBL/GenBank/DDBJ databases.
-!- FUNCTION: CYTOCHROMES P450 ARE A GROUP OF HEME-THIOLATE
MONOOXYGENASES. THEY OXIDIZE A VARIETY OF STRUCTURALLY UNRELATED
COMPOUNDS, INCLUDING STEROIDS, FATTY ACIDS, AND XENOBIOTICS.
-!- SIMILARITY: BELONGS TO THE CYTOCHROME P450 FAMILY.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Eukaryota; Metazoa; Nematoda; Chromadorea; Rhabditida; Rhabditoidea;
Rhabditidae; Peloderinae; Caenorhabditis.
                                                                                                                   EGF-LIKE.
BY SIMILARITY.
BY SIMILARITY.
BY SIMILARITY.
N-LINKED (GLCNAC. . .) (POTENTIAL).
MISSING (IN REF. 2).
MISSING (TN REF. 2).
WW, 3434C779D85B4501 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1;
                                                                                                                                                                                                                                                                                                                                                                                                                      ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   45.6%; Score 41.5; DB 1; Length 428;
                                                                                                                                                                                                                                                                                                                                                                  Score 42; DB 1; Length 438;
Pred. No. 23;
3; Mismatches 4; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          EMBL; U21321; AAB36969.1; -.
WORDEP; ZK177.5; CE02094.
InterPro; IPR001128; -.
PERSTE; PS00086; CYTOCHRONE_P450; 1.
PROSITE; PS00086; CYTOCHRONE_P450; 1.
BINDING.
BINDING.
428 AA; 49015 MW; 71DFB8BB35FIEE7A1 CRC64;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Indels
                    LIN-3 PROTEIN.
EXTRACELLULAR (POTENTIAL).
                                                                          POTENTIAL. CYTOPLASMIC (POTENTIAL).
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      3;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         01-NOV-1997 (Rel. 35, Created)
01-NOV-1997 (Rel. 35, Last sequence update)
15-DEC-1998 (Rel. 37, Last annotation update)
PUTATIVE CYTOCHROWE P450 CYP44 (EC 1.14..-).
Caenorhabditis elegans.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              428 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Pred. No. 27;
0; Mismatches
                                                                                                                                                                                                                                                                                               MΕ
                                                                                                                                                                                                                                                                                                                                                                  46.2%;
13
438
438
253
253
438
438
194
1164
1163
205
205
48923 N
                                                                                                                                                                                                                                                                                                                                                                                                                   8; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best Local Similarity 73.3
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              STANDARD;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                    2 NNVEKAPSATSSPVT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     3 NVEKAP-SATSSPVT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 11 NVEKCPYSPTSSPNT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     63 NEIGDAPSSTSTPET
                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
     1
14
14
231
254
150
150
1184
161
161
211
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              SEQUENCE FROM N.A. STRAIN-BRISTOL N2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               NCBI_TaxID=6239;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Anderson K.;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              YS45_CAEEL
Q09660;
                                                                       TRANSMEM
DOMAIN
DOMAIN
                                                                                                                                             DISULFID
DISULFID
DISULFID
CARBOHYD
                                                                                                                                                                                                                                               VARSPLIC
CONFLICT
SEQUENCE
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Query Match
                                                     DOMAIN
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               RESULT 15
YS45_CAEEL
                                                                                                                                                                                                                                                                                                                                                                                                                        Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  q
     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   NO DE LA PRESENTA DE LA PERSONA DE LA PERSON
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       ŏ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      g
```

```
GenCore version 4.5
Copyright (c) 1993 - 2000 Compugen Ltd
```

model
E AS
using
search,
protein
•
protein
ð

September 10, 2001, 14:01:15; Search time 42.28 Seconds (without alignments) 32.430 Million cell updates/sec Run on:

US-08-833-506C-32 91 Perfect score:

1 NNNVEKAPSATSSPVTQD 18 Sequence: BLOSUM62 Gapop 10.0 , Gapext 0.5 Scoring table:

219241

219241 seqs, 76174552 residues

Searched:

Total number of hits satisfying chosen parameters:

length: 0 length: 2000000000 Minimum DB seq Maximum DB seq Post-processing: Minimum Match 0% Maximum Match 100%

Listing first 45 summaries

PIR_68:* Database :

pir1:* pir2:* pir3:* pir4:*

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

S	Description	nitric-oxide synth			hypothetical prote	$\overline{}$	hypothetical prote		hunchback-related	protein kinase cek	BPLF1 protein - hu	breast cancer tumo	breast cancer susc	breast cancer tumo	probable iron (III	internalin- relate	hypothetical prote	lin-3 protein prec	hypothetical prote	hypothetical prote		mucin 3 T9 - human	hypothetical prote							
SUMMARIES	01	A49676	S47647	156575	S38253	153165	JC5027	JC5028	JC5029	A43271	S65440	865169	S74559	T26968	T16057	T43676	T40993	QQBE8	T30835	T42205	T30904	A75169	T41119	T24546	S28263	T20772	T27763	COZPCD	4	T38261
	DB	7	-	7	7	-	~	7	7	٦	7	7	7	~	7	7	7	٦	7	7	7	7	7	7	~	7	7	Н	7	7
	Length	1153	1147	1147	1147	1147	1147	1147	1147	1144	1147	758	246	394	806	983	1338	3149	3328	3329	3329	349	1045	366	438	639	428	767	236	327
dP	Ouery Match	94.5	74.7	74.7	74.7	74.7	74.7	74.7		62.6	60.4		50.5		48.4	48.4	48.4		47.8	47.8	•	٠	•	46.2	46.2		•		45.1	45.1
	Score	98	68	89	89	89	89	89	68	57	22	47	46	46	44	44	44	44	•	43.5	•	43	43	42	42	42	٠	41.5	41	41
	Result No.	1	7	3	4	S	9	7	æ	σ	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	56	27	28	29

a)	hypothetical prote hypothetical prote Hskl protein kinas	pectinesterase pre probable transcrip hypothetical prote	probable iron-sulf hypothetical prote hypothetical prote	- 5	probable homeotic merE protein - Xan
S44995 T45818	T28025 T31706 T43513	S53105 T18233 T20785	C75259 T21676 T20771	T20774 T29612 D81219	A38437 S70148
222	000	000	000	000	77
347	492 509 545	581 662 1011	1132 2586 4549	4667 727 753	993 78
455.1	45.1 45.1 45.1	45.1 45.1 45.1	45.1 45.1 45.1	45.1 44.5 44.5	44.5
441	444	4 4 4 1 1 1 1	444	41 40.5 40.5	40.5
30 31	3 8 8 3 8 4	35 37	38 4 9 4	41 42 43	44

ALIGNMENTS

```
C;Species: Homo sapiens (man)
C;Date: 16-Feb-1996 #sequence_revision 16-Feb-1996 #text_change 20-Jun-2000
C;Date: 16-Feb-1996 #sequence_revision 16-Feb-1996 #text_change 20-Jun-2000
C;Accession: A49676; JX0345; G01947; I38933; S47566; A47475
R;Charles, I.G.; Palmer, R.M.; Hickery, M.S.; Bayliss, M.T.; Chubb, A.P.; Hall, V.S.;
Proc. Natl. Acad. Sci. U.S.A. 90, 11419-11423, 1993
A;Title: Cloning, characterization, and expression of a cDNA encoding an inducible ni
A;Reference number: A49676; MUID:94068614
nitric-oxide synthase (EC 1.14.13.39), inducible - human
```

A. Accession: A49676
A. Status: preliminary
A. Molecule type: mRMs
A. Molecule type: mRMs
A. Molecule type: mRMs
A. Residues: 1-1153 <RES
A. Cross-references: EMBL:X73029; NID:g441452; PIDN:CAA51512.1; PID:g441453
A. Cross-references: EMBL:X73029; NID:g441452; PIDN:CAA51512.1; PID:g441453
A. Blochem: 116, 575-581, 1994
A. Title: Cloning and functional expression of human inducible nitric oxide synthase (A. Reference number: JX0345; MUID:9515267
A. A. Accession: JX0345

A; Molecule type: mRNA
A; Residues: 1-607, 'L', 609-1153 <HOK>
A; Cross-references: DDBJ:D26525; NID:9559326; PIDN:BAA05531.1; PID:91228940
A; Experimental source: DIBJ:D26525; NID:9559326; PIDN:BAA05531.1; PID:91228940
B; Park, C.; Park, R.; Krishna, G.
Submitted to the EMBL Data Library, July 1995
A; Reference number: 608912

A,Accession: G1947
A,Status: translated from GB/EMBL/DDBJ
A,Molecule type: mRNA
A,Molecule type: mRNA
A,Molecule type: mRNA
A,Residues: 1.607, 'L', 609-1153 <PAR>
A,Residues: 1.607, 'L', 609-1153 <PAR>
A,Cross-references: EMBL: U31511; NID: 9951320; FIDN: AAB49041.1; PID: 9951321
A,Cross-references: EMBL: U3.A. 92, 7809-7813, 1995
Proc. Natl. Acad. Sci. U.S.A. 92, 7809-7813, 1995
A,Title: Continuous nitric oxide synthesis by inducible nitric oxide synthase in norm A,Reference number: 138933; MuID: 95372368

A; Status: preliminary; nucleic acid sequence not shown; translation not shown

A;Molecule type: mRNA A;Residues: 1-675,'I',677-932,'G',934-965,'A',967-1153 <RE2> A;Cross-references: EMBL:U20141; NID:9687680; PIDN:AAB60366.1; PID:9687681

R;Maier, R.; Bilbe, G.; Rediske, J.; Lotz, M.
Biochim. Biophys. Acta 1208, 145-150, 1994
A;Title: Inducible nitric oxide synthase from human articular chondrocytes: CDNA clon
A;Reference number: \$47566; MUID:94368816
A;Accession: \$47566
A;Status: preliminary; nucleic acid sequence not shown

A; Molecule type: mRNA A; Residues: 1-22,'G', 24-153,'L',155-176,'V',178-799,'A', 801-912,'P',914-1153 <MAI> A; Cross-references: EMBL:U05810; NID:9452487; PIDN:AAA56666.1; PID:9452488 A; Cross-references: EMBL:U05810; NID:9452488; Proc. DA.; DA.; Lowenstein, C.J.; Shapiro, R.A.; Nussler, A.K.; Di Silvio, M.; Mang, Proc. Natl. Acad. Sci. U.S.A. 90, 3491-3495, 1993

re

ö

Gaps

; 0

Indels

Length 1147;

Best Local Similarity

Length 1147;

```
C;Species: Rattus norvegicus (Norway rat)
C;Date: 05-May-2000 #sequence_revision 05-May-2000 #text_change 05-May-2000
C;Accession: 156575
B;Galea, E.; Rels, D.J.; Feinstein, D.L.
J. Neurosci. Res. 37, 406-414, 1994
A;Title: Cloning and expression of inducible nitric oxide synthase from rat astrocyte A;Reference number: 156575, MUID:94231594
A;Accession: 156575
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A Molecule type: mRNA
A; Residues: 1-1147 <AAAA>
A; Residues: 1-1147 <AAAA>
A; Residues: 1-1147 <AAAA>
A; Experimentel sources: GB:D12520; NID:g391858; PIDN:BAA02090.1; PID:g391859
A; Experimental source: liver
B; Wood, E.R.; Berger Jr., H.; Sherman, P.A.; Lapetina, E.G.
Biochem. Blophys. Res. Commun. 191, 767-774, 1993
A; Tille: Hepatocytes and macrophages express an identical cytokine inducible nitric on A; Reference number: JN0457; MUID:93221515
A; Reference number: JN0457; MUID:93221515
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A; Description: catalyzes the oxidation of an L-arginine guanidino nitrogen and of NAD C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein re C; Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; me F; 536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           A;Title: Molecular cloning of a cDNA encoding an inducible calmodulin-dependent nitri
A;Reference number: S38253; MUID:94039059
A;Accession: S38253
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                A; Residues: 1-41, 'SS', 44-103,105-190,'O',192-213,'R',215-247,'T',249-263,'I',265-373,'S',896-1000,'LG',1003-1015,'RR',1018-1026,'EQ',1029-1147 <WOO>
A;Cross-references: PIDN:AAB26037.1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   H.; Suzuki, H.; Nagasaki, K.; Kawasaki,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Cross-references: EMBL:U03699; NID:9430718; PIDN:AAC13747.1; PID:9430719
C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein
C;Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; F;536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;538-674/Domain: flavodoxin homology <FEX>
F;538-674/Domain: flavodoxin homology <FEX>
F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    nitric-oxide synthase (EC 1.14.13.39) - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 16-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                F.538-674/Domain: flavodoxin nomology ארביהר
F.197/Binding site: heme Iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                          nitric-oxide synthase (EC 1.14.13.39) [similarity] - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 68; DB 1;
Pred. No. 0.0099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Score 68; DB 1;
Pred. No. 0.0099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               C; Accession: S38253; JN0457
R; Adachi, H.; Iida, S.; Oguchi, S.; Ohshima,
Eur. J. Biochem. 217, 37-43, 1993
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A;Status: translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
A;Residues: 1-1147 <RES>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         74.78;
72.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              74.78;
72.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Conservative
                            25 NNNVEKTPGAIPSPTTQD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             A; Experimental source: liver C; Genetics:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
                            qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ŏλ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  RESULT 2
847647
nitric-oxide synthase (EC 1.14.13.39) - rat
C.Species: Rattus norvegicus (Norvay rat)
C.Date: 20-Apr-2000 #sequence_revision 20-Apr-2000 #text_change 16-Jun-2000
C.Accession: 847647; JC1472
R.Geng, Y.; Almqvist, M.; Hansson, G.K.
Blochim. Biophys. Acta 1218, 421-424, 1994
A.711le: CDNA cloning and expression of inducible nitric oxide synthase from rat vascula
A.Recence number: 847647; MUD:94323551
A.Molcoule type: mRNA
A.Residues: 1-1147 GENA
A.Residues: 1-117 MID:943933; PIDN:CAA54208.1; PID:9439284
A.Residues: 1-117 MID:94304 GENA
A.Residues: 1-117 MID:94304041 MID:93191721
A.Residues: 1-117 MID:94304 GENA
A.Residues: 1-1147 MID:94404 GENA
A
A;Title: Molecular cloning and expression of inducible nitric oxide synthase from human A;Reference number: A47475; MUID:93234523
A;Accession: A47475; MUID:93234523
A;Accession: A47475; MUID:93234523
A;Accession: A47475; MUID:9323445
A;Accession: A47476; MID:40104; MID:40104
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ·.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 86; DB 2; Length 1153;
Pred. No. 1.3e-05;
Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 68; DB 1; Length 114
Pred. No. 0.0099;
); Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           74.78;
72.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Query Match
Best Local Similarity 94.4%;
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     25 NNNVEKAPCATSSPVTQD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     g
```

a e

ö

QQ

ô

```
Distriction of the synthase (EC 1.14.13.39) L - rat
C; Species: Rattus norvegicus (Norway rat)
C; Species: Rattus norvegicus (Norway rat)
C; Species: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C; Accession: JC5028
R; Tsutsumishita, Y:; Kawai, Y:; Takahara, H:; Onda, T.; Miyoshi, J:; Futaki, S:; Niwa Biol. Pharm. Bull. 19, 1374-1376, 1996
A; Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, an A; Reference number: JC5027; MUID:97070590
A; Accession: JC5028
A; Accession: JC5028
A; Molecule type: mRNA
A; Residues: 1-1147 <TSU>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   C;Species: Rattus norvegicus (Norway rat)
C;Date: 31-Jan-1997 #sequence_revision 31-Jan-1997 #text_change 04-Mar-2000
C;Datession: JCS029
C;Accession: JCS029
R;Tsutsunishita, Y.; Kawai, Y.; Takahara, H.; Onda, T.; Miyoshi, J.; Futaki, S.; Niwa Biol. Pharm. Bull. 19, 1374-1376, 1996
A;Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, an
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          A) Experimental source: lung
C; Comment: This protein synthesizes nitric oxide from L-arginine.
C; Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein
C; Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FNN; heme; iron; 1
F; 536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>-
F; 538-674/Domain: flavodoxin homology <FLX>-
F; 197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       A;Residues: 1-1147 cTSUD-
A;Experimental source: uterus
C;Comment: This protein synthesizes nitric oxide from L-arginine.
C;Comment: This protein synthesizes nitric oxide from L-arginine.
C;Superfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein.
C;Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FMN; heme; iron; IF;536-1124/Domain: NADPH--ferrihemoprotein reductase homology <FEH>
F;538-674/Domain: flavodoxin homology <FELX>
F;197/Binding site: heme iron (Cys) (axial ligand) #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               nitric-oxide synthase (EC 1.14.13.39), calmodulin-independent - mouse C;Species: Was muscutlus (house mouse) (C.Date: 10-Sep-1999 #sequence_revision 10-Sep-1999 #text_change 03-Mar-2000 C;Accession: A43271; A42166; JN0458; A46186
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                74.7%; Score 68; DB 2; Length 1147; 72.2%; Pred. No. 0.0099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         74.7%; Score 68; DB 2; Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Pred. No. 0.0099;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           nitric-oxide synthase (EC 1.14.13.39) U - rat
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Reference number: JC5027; MUID:97070590
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Accession: JC5029
A;Status: nucleic acid sequence not shown
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                72.28;
25 NNNVEKTPGAIPSPTTQD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      25 NNNVEKTPGAIPSPTTQD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    25 NNNVEKTPGAIPSPTTQD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Best_Local Similarity
Matches 13; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A; Molecule type: mRNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A43271
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             g
g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ð
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C; Accession: JC5027
R; Tsutsumishita, Y.; Kawai, Y.; Takahara, H.; Onda, T.; Miyoshi, J.; Futaki, S.; Niwa, M. Biol. Pharm. Bull. 19, 1374-1376, 1996
A; Title: Sequence analysis of inducible nitric oxide synthase in rat kidney, lung, and u. A; Reference number: JC5027; MUID:97070590
A; Reference number: JC5027; MUID:97070590
A; Residues: nucleic acid sequence not shown
A; Molecule type: mRNA
A; Residues: 1-1147 <TSU>
A; Residues: 1-1147 <TSU
A; Residues: 1147 <
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    C; Accession: 151465
R; Karlsen, A.E.; Andersen, H.U.; Vissing, H.; Larsen, P.M.; Fey, S.J.; Cuartero, B.G.; M Diabetes 44, 753-758, 1995
A; Title: Cloning and expression of cytokine-inducible nitric oxide synthase cDNA from ra A; Reference number: 153165; MUID:95309542
A; Accession: 15165
A; Accession: 15165
A; Accession: 15165
A; Accession: 15165
A; Reference number: 153165; MUID:9886072; PIDN:AAA85861.1; PID:9886073
A; Residues: 1-1147 < RES>
A; Residues: 1-1147 < RES>
A; Cross-references: EMBL:026686; NID:9886072; PIDN:AAA85861.1; PID:9886073
C; Genetics: A; Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             nitric-oxide synthase (EC 1.14.13.39) K - rat
C.Species: Rattus norvegicus (Norway rat)
C.Date: 21-Jan-1997 #sequence_revision 21-Jan-1997 #text_change 20-Jun-2000
                                                                                                                                                                                                                                                                                                                                                                                                                            nitric-oxide synthase (EC 1.14.13.39) [similarity] - rat
C;Species: Rattus norvegicus (Norway rat)
C;Date: 05-May-2000 #sequence_revision 05-May-2000 #text_change 05-May-2000
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Gaps
     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         0
.;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Score 68; DB 2; Length 1147;
Pred. No. 0.0099;
0; Mismatches 5; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Score 68; DB 1; Length 114
Pred. No. 0.0099;
0; Mismatches 5; Indels
     Indels
5
Mismatches
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       74.78;
72.28;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 74.7%;
Best Local Similarity 72.2%;
Matches 13; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        25 NNNVEKTPGAIPSPITOD 42
                                                                                                                                                      25 NNNVEKTPGAIPSPTTQD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1 NNNVEKAPSATSSPVTQD 18
                                                                                               1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match 74.7
Best Local Similarity 72.2
Matches 13; Conservative
Conservative
13;
Matches
```

a

ð

re He

ö

ò

4

ē

ó

Gaps

ö

Indels

```
A.Residues: 1-758 epuths
A.Cross-references: EMBL:273514; NID:g1370335; PID:e247047; PID:g1370336; MIPS:YPL158
A.Cross-references: Expain 5288(6.18972)
A.Experimental source: strain 5288(6.18972)
B.Purnelle, B.; Comblez, S.; Coster, F.; Naveau, F.; Goffeau, A.
Submitted to the EMBL Data Library, March 1996
A.Description: The sequence of 55 kb on the left arm of yeast chromosome XVI identifit ogue to the human phosphotyrosyl phosphatase activator PTPA and a homologue to the pl
A.Reference number: S69428
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            peptidy1-prolyl cis-trans isomerase B - Synechocystis sp. (strain PCC 6803)
N;Alternate names: hypothetical protein s110227
C;Species: Synechocystis sp.
A;Variety: PCC 6803
C;Date: 25-Apr-1997 #sequence_revision 25-Apr-1997 #text_change 08-Oct-1999
C;Accession: S74559
R;Kaneko, T.; Sato, S.; Kotani, H.; Tanaka, A.; Asamizu, E.; Nakamura, Y.; Miyajima, O, K.; Okumura, S.; Shimpo, S.; Takeuchl, C.; Wada, T.; Watanabe, A.; Yamada, M.; Yas DNA Res. 3, 109-136, 1996
A;Title: Sequence analysis of the genome of the unicellular cyanobacterium Synechocys
                                      chromoprotein; FAD; flavoprotein; FMN; heme; iron;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               hypothetical protein YPL158c - yeast (Saccharomyces cerevisiae)
N;Alternate names: hypothetical protein P2570
C;Species: Saccharomyces cerevisiae
C;Species: Saccharomyces cerevisiae
C;Date: 10-Dec-1994 #sequence_revision 31-May-1996 #text_change 05-Dec-1997
C;Accession: S65169; S69441
R;Purnelle, B.; Coster, F.; Goffeau, A.
submitted to the Protein Sequence Database, May 1996
A;Reference number: S65154
A;Reference number: S65169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      A, Cross-references: EMBL: X96770; NID: 91403537; PID: e239043; PID: 91403551
                       C;Keywords: calmodulin binding; chromoprotein; FAD; flavoprotein; FNN F;506-535/Region: calmodulin binding F;536-1124/Domain: NADPH--ferithemoprotein reductase homology <FEH>F;536-1124/Domain: NADPH--ferithemoprotein reductase homology <FEH>F;538-674/Domain: flavodaxin homology <FEX>F;594-618/Region: blopterin binding *fetx predicted F;764-778/Region: FMD binding #status predicted F;764-778/Region: FAD binding #status predicted F;901-910/Region: FAD binding #status predicted F;901-910/Region: NADPH binding #status predicted F;1074-1087/Region: NADPH binding #status predicted F;1074-1087/Region: NADPH binding #status predicted F;1074-1087/Region: NADPH binding #status predicted
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Length 1147;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 758;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 47; DB 2;
Pred. No. 14;
3; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Score 55; DB 2;
Pred. No. 1.2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Reference number: S74322; MUID: 97061201
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           60.4%;
61.1%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         51.6%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                25 NNNVVTTPGAIPSPTTOD 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Ouery Match
Best Local Similarity 61.1
Matches 11; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ||:| ||||:| |:
309 NVQKVPSATNSKTTK 323
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    3 NVEKAPSATSSPVTQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   A; Residues: 1-758 <PUW>
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 A; Molecule type: DNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  A; Accession: S69441
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         C; Genetics
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RESULT
S65169
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            å
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          g
R:X16, Q.; Cho, H.J.; Calaycay, J.; Mumford, R.A.; Sviderek, K.M.; Lee, T.D.; Ding, A.; Scherec 256, 25-228, 1929

A:Title: Cloning and Characterization of inducible nitric oxide synthase from mouse mach and the content of the cont
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     nitric-oxide synthase (EC 1.14.13.39) - rat
C; Species: Rattus norvegicus (Norway rat)
C; Species: Rattus norvegicus (Norway rat)
C; Species: 28.0ct-1996 #sequence_revision 13-Mar-1997 #text_change 04-Mar-2000
C; Accession: 565440
R; Iwashina, M.; Hirata, Y.; Imai, T.; Sato, K.; Marumo, F.
Eur. J. Blochem. 237, 668-673, 1996
A; Title: Molecular cloning of endothalial, inducible nitric oxide synthase gene from rat
A; Reference number: 565440; MUID:96235231
A; Reference number: 565440
A; Accession: 565440
A; Accession: 565440
A; Accession: 565440
A; Residues: 1-1147 < IWA>
C; Luperfamily: nitric-oxide synthase; flavodoxin homology; NADPH--ferrihemoprotein reduc
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   .
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ch 62.6%; Score 57; DB 1; Length 1144;
1 Similarity 61.1%; Pred, No. 0.57;
11; Conservative 1; Mismatches 6; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Best Local Similarity
Matches 11; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ð
```

ö

Gaps

ö

S

```
Search completed: September 10, 2001, 14:01:16 Job time: 215 sec
    Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Best Local Similarity
    11;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Matches
    Matches
                                                                                                                                                                                                                                                                                                                                                                                      T43676
                                                                                                                                                                                        Ω
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 δλ
                                                                                                        ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     hypothetical protein F13D11.2 - Caenorhabditis elegans
C;Species: Caenorhabditis
C;Species: T16057
R;Fulton, L.
R
                                  A:Status: nucleic acid sequence not shown; translation not shown
A:Molecule type: DNA
A:Molec
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            A;Gene: CESP:Y47H9C.6.
A;Map position: 1
A;Introns: 31/3; 46/1; 76/1; 92/1; 118/1; 156/1; 194/2; 287/3; 332/3; 347/1; 385/1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ó:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Length 246;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Score 46; DB 2; Length 394;
Pred. No. 10;
4; Mismatches 2; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Length 908;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    A;Introns: 22/3; 168/3; 539/3; 729/1; 769/3; 839/3; 858/2
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               DB 2;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 44; DB 2;
Pred. No. 53;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          50.5%; Score 46; DB 47.1%; Pred. No. 6.1; tive 5; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            57.18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                48.48;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1 NNNVEKAPSATSSPVTQ 17
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 : |:|:|||:|||
170 DPGPTASSSPLTQD 183
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          5 EKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ouery Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
Best Local Similarity
Matches 8; Conserv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                C;Genetics:
A;Gene: CESP:F13D11.2
S74559
    A; Accession:
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  qq
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         g
```

```
hunchback-related protein - Caenorhabditis elegans
C;Species: Caenorhabditis elegans
C;Date: 21-Jan-2000 #sequence_revision 21-Jan-2000 #text_change 21-Jul-2000
C;Accession: T43676
R;Fay, D.S.; Stanley, H.M.; Han, M.; Wood, W.B.
Dev. Biol. 2025, 240-253; 1999
A;Tille: A Caenorhabditis elegans homologue of hunchback is required for late stages A;Reference number: 222622; MUID:99117349
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ij
ä
                                                                                                                                                                                                                                                                                                                                                                                                                                         A; Residues: 1-982 <FMY>
A; Cross-references: EMBL:AF097737; NID:g4323034; PIDN:AAD16170.1; PID:g4323035 C; Genetics:
A; Gene: hbl-1
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        4
  4,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      48.4%; Score 44; DB 2; Length 982; 55.0%; Pred. No. 57;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        3; Indels
  Indels
  3;
                                                                                                                                                                                                                                                                                                                                                                                            A;Accession: T43676
A;Status: preliminary; translated from GB/EMBL/DDBJ
A;Molecule type: mRNA
  Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      2; Mismatches
;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              289 NNNNEEAPASTVSACSTPTT 308
                                                                        189 NNNNEEAPASTVSACSTPTT 208
                                             1 NNNVEKAP----SATSSPVT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      1 NNNVEKAP----SATSSPVT 16
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        11; Conservative
```

This Page Blank (uspto)

GenCore version 4.5 (c) 1993 - 2000 Compugen Ltd.	ing sw model	2001, 14:00:25; Search time 67.08 Seconds (without alignments) 16.268 Million cell updates/sec	:-32 SSPVTQD 18	Gapext 0.5	60623988 residues	hits satisfying chosen parameters: 412676	000	0% 100% 45 summaries	neseq_0601:* SIDSB/gcgdata/geneseqp/AA1980.DAT:* SIDSB/gcgdata/geneseqp/AA1981.DAT:* SIDSB/gcgdata/geneseqp/AA1981.DAT:* SIDSB/gcgdata/geneseqgp/AA1982.DAT:* SIDSB/gcgdata/geneseqgp/AA1981.DAT:* SIDSB/gcgdata/geneseqgp/AA1981.DAT:* SIDSB/gcgdata/geneseqgp/AA1981.DAT:* SIDSB/gcgdata/geneseqgp/AA1981.DAT:* SIDSB/gcgdata/geneseqgp/AA1987.DAT:* SIDSB/gcgdata/geneseqgp/AA1987.DAT:* SIDSB/gcgdata/geneseqgp/AA1989.DAT:* SIDSB/gcgdata/geneseqgp/AA1990.DAT:* SIDSB/gcgdata/geneseqgp/AA1990.DAT:* SIDSB/gcgdata/geneseqgp/AA1991.DAT:* SIDSB/gcgdata/geneseqgp/AA1991.DAT:* SIDSB/gcgdata/geneseqgp/AA1991.DAT:* SIDSB/gcgdata/geneseqgp/AA1991.DAT:* SIDSB/gcgdata/geneseqgp/AA1991.DAT:* SIDSB/gcgdata/geneseqgp/AA1991.DAT:* SIDSB/gcgdata/geneseqgpeneseqp/AA1991.DAT:*	
gen Ltd.		·				412			P/AA1980.1 P/AA1981.2 P/AA1981.2 P/AA1984.1 P/AA1986.1 P/AA1987.1 P/AA1987.1 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4 P/AA1997.4	, de de
	31	, ×			sidues	ameters:		S	Adenesed Ade	4040404
	g sw mode		TQD		23988 res	hosen par		0% summarie	a/genesec a/genesec a/genesec a/genesec a/genesec a/genesec a/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec ta/genesec	1 041
	cch, using	10,	US-08-833-506C-32 91 1 NNNVEKAPSATSSPVTQD	•	seds, 606	sfying c	2000000000		eseq_0601:* 1DS8/gcgdat 1DS8/g	or reduing
Copyright	protein search,	September	US-08-83 91 1 NNNVER	BLOSUM62 Gapop 10.0	412676 8	hits sati	length: 0 length: 2(Minimum Match Maximum Match Listing first	A. Geneseq. 11: SIDSB/. 21: SIDSB/. 22: SIDSB//. 22: SIDSB/. 22: SIDSB/. 22: SIDSB/. 22: SIDSB/. 22: SIDSB/. 22: SIDSB/. 22: S	; + po +
	- prc		re:	le:		r of	sed 1 sed 1	sing:		ž
	OM protein	: uo	itle: erfect score equence:	ing table	ched:	1 number	DB DB	Post-processing:	essec	Dred
	om Po	Run	Title: Perfect Sequence	Scoring	Searched	Total	Minimum Maximum	Post	Database	

Pred. No. is the number of results predicted by chance to have a score greater than or equal to the score of the result being printed, and is derived by analysis of the total score distribution.

SUMMARIES

		Description	Human iNOS peptide	Human iNOS peptide	Human iNOS (25-42)	Human iNOS peptide	Inducible nitric o	Sequence encoded b	Nitric-oxide-synth	Hepatocyte inducib	Human inducible ni	Amino acid sequenc	Human inducible ni
		ID	AAW81207	AAW81211	AAW81175	AAW81277	AAW96322	AAR55764	AAR63206	AAR88464	AAW36113	AAB31724	AAB66724
		DB	19	19	19	19	20	15	15	17	19	22	22
		Match Length DB ID	18	18	18	18	1146	1153	1153	1153	1153	1153	1153
æ	Query	Match	100.0	100.0	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5	94.5
		Score	91	91	98	98	98	98	98	98	98	98	98
	Result	. So	1	7	e	4	S	φ	7	80	6	10	11

Human iNOS peptide Human iNOS peptide Human iNOS peptide	Human iNOS peptide Rat iNOS (25-42) p	and the	Rat iNOS peptide f	ducik	Human iNOS peptide	TNOS		Human iNOS peptide			Mouse iNOS (25-42)	Inducible nitrogen	Inducible nitric o			Human iNOS peptide		Amino acid sequenc		Amino acid sequenc	Amino acid sequenc	Amino acid sequenc	Human BRCA2 tumour	Human secreted pro	Human secreted pro	endogl	Chimeric endogluca	fySSRP. Saccharom	S. cerevisiae SSRP	Human ORFX ORF1889
AAW81218 AAW81284 AAW81280	AAW81214 AAW81177	AAW81321	AAW81213	AAW02571	AAW81320	AAW81212	AAW81219	AAW81285	AAW81281	AAW81215	AAW81176	AAR77360	AAW51246	AAW81220	AAW81286	AAW81216	AAW81282	AAB08720	AAB08719	AAB08721	AAB08722	AAB08715	AAY56029	AAG01517	AAY76149	AAW04936	AAW04935	AAR38746	AAW39214	AAB42125
19 19	19	19	19	17	13	13	19	19	19	19	19	16	19	19	19	19	19	21	21	21	21	21	21	21	21	17	17	14	19	21
15 15 15	15 18		Н		18		12	12	12	12	18	1144	1144	6	9	σ	σ	504	537	263	573	296	3329	75	92	293	9	542	₹	1049
0.00	80.2	4	74.7	74.7	68.1	68.1	62.9	62.9	64.8	64.8	62.6	62.6	62.6	51.6	51.6	48.4	48.4	48.4	48.4	48.4	48.4	48.4	47.8	45.1	45.1	45.1	45.1	45.1	45.1	45.1
75 75 73	73	68	99	9	62	62	9	9	59	59	22	57	57	47	47		44	44	44	44	44	44	43.5	41	41	41	41	41	41	41
12 13 14	15 16	17	18	19	20	21	22	23	24	25	56	27	28	29	30	31	. 32	33	34	32	36	37	38	39	40	41	42	43	44	45

ALIGNMENTS

RESULT

Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; Mab. Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics. Human iNOS peptide fragment capable of binding Mab 21C10-1D10 #1. AAW81207 standard; peptide; 18 AA. 97WO-US06500. 97US-6667777 30-APR-1999 (first entry) WPI; 1998-594495/50. (WEBB/) WEBBER R. W09845710-A1. Homo sapiens. 11-APR-1997; 07-APR-1997; 15-OCT-1998. Webber R; AAW81207; AAW81207

Wed

~

ö

Gaps

ó

Indels

Length 18;

```
tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psorlasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Inducible nitric oxide synthase; INOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                100.0%; Score 91; DB 19;
100.0%; Pred. No. 1.5e-07;
Live 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Human iNOS (25-42) peptide fragment.
                                                                                                                                                                                                                                                                                                                                                                                          ¥.
                                                                                                                                                                                                                                                                                                                                                                                        AAW81175 standard; peptide; 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       94.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               97US-6667777
                                                                                                                                                                                                                                                                               1 nnnvekapsatsspytgd 18
                                                                                                                                                                                                                                                           1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                (first entry)
                                                                                                                                                                                                                       Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1998-594495/50
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                      Local Similarity
nes 18; Conser
                                                                                                                                  AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    (WEBB/) WEBBER
                                                                                                                                18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        15-0CT-1998.
                                                                                              invention
                                                                                                                                                                                                                                                                                                                                                                                                                             AAW81175;
                                                                                                                                  Sequence
                                                                                                                                                                                      Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Webber
                                                                                                                                                                                                         Best Loc
Matches
                                                                                                                                                                                                                                                                                                                                                                         AAW81175
 8888888888
                                                                                                                                                                                                                                                           ò
                                                                                                                                                                                                                                                                                          g
                                                                                                                                                                                                                                                                                                                                                                                                                             ö
                                                                   specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (inUSS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                                                       Gaps
                                                       an immunoassay method where a sample with a
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                     0;
                                                                                                                                                                                                                                                                                                                                   18;
                                                                                                                                                                                                                                                                                                                                                                     Indels
                                                                                                                                                                                                                                                                                                                                 Length
                                                                                                                                                                                                                                                                                                                               Score 91; DB 19;
Pred. No. 1.5e-07;
Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     18
/note≕ "Asp residue amidated"
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Human 1NOS peptide fragment PS-5103
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ş
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Example 4; Page 34; 93pp; English.
                 Example 3; Page 32; 93pp; English
                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AAW81211 standard; peptide; 18
                                                                                                                                                                                                                                                                                                                               100.0%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                             1 nnnvekapsatsspvtgd 18
                                                                                                                                                                                                                                                                                                                                                                                                          NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (first entry)
                                                     invention describes
                                                                                                                                                                                                                                                                                                                                                                     Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                               Query Match
Best Local Similarity
Matches 18; Conserv
                                                                                                                                                                                                                                                                           À.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WEBB/) WEBBER
                                                                                                                                                                                                                                                                           18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Modified-site
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            15-0CT-1998
                                                                                                                                                                                                                                          invention
                                                                                                                                                                                                                                                                             Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         AAW81211;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                        Н
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Ношо
```

Key

RESULT AAW81211

ò a

```
This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or minics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases represents a peptide fragment from human iNOS which is used in the method of the invention.
Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Score 86; DB 19;
Pred. No. 8.8e-07;
                                                                                                                                                                                                       Disclosure; Page 20; 93pp; English.
```

```
28-JUN-1999 (first entry)
                                                                                                                                                                                                                                                                         WPI; 1999-153448/13
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          1146 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Best Local Similarity
                                                                                                                                                                                                                                                                                  N-PSDB; AAX08434
                                                                                                   Homo sapiens
                                                                                                                     WO9906059-A2
                                                                                                                                                            30-JUL-1998;
                                                                                                                                                                                          30-JUL-1997;
                                                                                                                                                                               03-MAR-1998;
                                                                                                                                         11-FEB-1999
                                                                                                                                                                                                                                           Clark SA,
Ohneda M,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        diseases,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAR55764;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              9
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  XXXX
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                q
   ò
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    ö
  ö
                                                                                                                                                                                                                                                                                                                                                                                                                                           This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (1NOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                   nitric oxide synthase; iNOS; human; immunoassay; detection; antibody; mimic; quantitation; sepsis; septic shock; lupus; infarction; tissue rejection; transplantation; psoriasis;
  Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Gaps
                                                                                                                                                                                                                                                                                                                                                                                 Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
  .;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Length 18;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Indels
  Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Score 86; DB 19; L
Pred. No. 8.8e-07;
1; Mismatches 0;
  1;
  Mismatches
                                                                                                                                                                                                  autoimmune disease; multiple sclerosis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAW96322 standard; Protein; 1146 AA.
                                                                                          AA.
                                                                                                                                                                                                                                                                                                                                                                                                                         Disclosure; Fig 1; 93pp; English.
 ;
                                                                                                                                                 Human iNOS peptide fragment #3.
                                                                                       AAW81277 standard; peptide; 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                94.5%;
94.4%;
                                                                                                                                                                                                                                                                                  97WO-US06500
                                                                                                                                                                                                                                                                                                      97US-6667777
                               1 nnnvekapcatsspvtgd 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match 94.5
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                               WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   18 AA;
                                                                                                                                                                                                                                                                                                                          (WEBB/) WEBBER
                                                                                                                                                                                                                       Homo sapiens
                                                                                                                                                                                                                                          WO9845710-A1
                                                                                                                                                                                                                                                                                  11-APR-1997;
                                                                                                                                                                                                                                                                                                      07-APR-1997;
                                                                                                                               30-APR-1999
                                                                                                                                                                                                                                                               15-OCT-1998
17;
                                                                                                                                                                      Inducible;
                                                                                                                                                                                 monoclonal
                                                                                                                                                                                          myocardial
                                                                                                                                                                                                                                                                                                                                             Webber R;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                invention
                                                                                                            AAW81277;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               AAW96322;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Ŋ
 Matches
                                                                               AAW81277
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAW96322
                                                                    RESULT
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           q
                                       g
                                                                                          ò
                     ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    chemoattractant protein-1. The methods can be used for the treatment of e.g. insulin-dependent diabetes mellitus (IDDM), NIDDM, obesity,
                                                                                                  diabètes mellitus; treatment; therapy; nitric oxide; NO; beta cell; fatty acid; lipotoxic; cytotoxic; cytokine; osteoporosis; inflammatory disease; autoimmune disease; neurodegenerative disease.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Protection of mammalian cells against immunotoxicity or lipotoxicity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  achieved by blocking free radical production or the accumulation of free radicals in that cell. Treatment of insulin dependent diabetes mellitus (IDDM) can be achieved by by blocking nitric oxide (NO) production in a pancreatic beta cell and by providing a composition comprising an agent that reduces levels of fatty acids in the cells and protects beta-cells of the subject against lipid-mediated cell death. Cells can also be protected against lipid-mediated cell canthods can be used for protected against intric oxide mediated cytocxicity by introducing into the cell an antioxidising agent. The methods can be used for protecting cells against immunotoxicity mediated by, e. g. 1L-1 beta. 1L-1 alpha, agama IFN, TNF alpha, TNF agranulocyte-macrophage colony stimulating factor or monocyte

    used for treating, e.g. diabetes, obesity, wasting syndromes,
osteoporosis, inflammatory diseases, autoimmune diseases or

                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Inhibition of cytokine mediated immunotoxicity of cells can be
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Score 86; DB 20; Length 1146;
Pred. No. 0.0001;
0; Mismatches 1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                wasting syndromes, short stature, osteoporosis, inflammatory
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  autoimmune diseases, or neurodegenerative diseases
                                                                    Manganese containing superoxide dismutase; MnSOD; IDDM;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Newgard CB;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Koyama K, Lee Y, New
Thigpen A, Unger RH
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Disclosure; Page 247-251; 253pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAR55764 standard; Protein; 1153 AA.
Inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 94.58;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                           98WO-US15781
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            98US-0055092
97US-0055092
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           neurodegenerative diseases
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (BETA-) BETAGENE INC.
(TEXA ) UNIV TEXAS SYSTEM.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Hohmeier H, Ka
Shimabukurom,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     17; Conservative
```

(first entry)

28-DEC-1994

93WO-US11401 92US-0981344

23-NOV-1993; 25-NOV-1992;

Homo sapiens

WO9412645-A.

09-JUN-1994

Geller DA, PITTSBURGH

Billiar TR,

(UYPI-) UNIV

WPI; 1994-200273/24.

N-PSDB; AAQ66914

cDNA clone to prevent

```
nitric-oxide-synthase. cDNA was generated and used to construct a library in lambda ZAPII. This was screened with a 650 bp fragment of mouse inducible NO-synthase cDNA to identify the full-length clone pBSHSINOS. The insert was transferred to pSVL to give a vector capable of expressing NO-synthase in CHO cells under control of a heterologous constitutive promoter.
                                                                                                                                                                                                                                                                                                             Human chondrocytes were incubated with interleukin-1-beta to induce
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  An inducible nitric oxide syntase (iNOS - AAR88464) is the product
                                                                                                                                                                                                                  for diagnosis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Inducible nitric oxide synthase; iNOS; hepatocyte; gene therapy; vascular occlusive disease; cancer; infection.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Inducible nitric oxide synthase gene - useful in gene therapy treat, e.g. vascular occlusive disease and cancer
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            DB 15; Length 1153; 0.0001;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                1; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     Tzeng
                                                                                                                                                                                              New human inducible nitric oxide synthase - useful identifying enzyme inhibitors and stimulators, and and treatment of e.g. viral infections or tumours
                                                                                                           ŝ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Simmons RL,
                                                                                                             Moncada
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Score 86; DB
Pred. No. 0.00
0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Hepatocyte inducible nitric oxide synthase.
                                                                                                           Palmer RMJ,
                                                                                                                                                                                                                                                                         Disclosure; Page 25-31; 42pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Disclosure; Page 54-58; 91pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Nussler AK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            AAR88464 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            94.5%;
94.4%;
 94WO-GB00621
                                   93GB-0006386
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           95WO-US07849.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             94US-0265046
                                                                       (WELL ) WELLCOME FOUND LTD
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       nnnvekapcatsspvtgd 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  13-MAY-1996 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Local Similarity 94.4 nes 17; Conservative
                                                                                                           Moncada SE,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Geller DA,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               (UYPI-) UNIV PITTSBURGH
                                                                                                                                             WPI; 1994-333198/41.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WPI; 1996-068641/07,
                                                                                                                                                                                                                                                                                                                                                                                                                                                        1153 AA;
                                                                                                                                                              N-PSDB; AAQ77700
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     N-PSDB; AAT10115
25-MAR-1994;
                                   26-MAR-1993;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  WO9600006-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             24-JUN-1994;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         20-JUN-1995;
                                                                                                         Charles IG,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      04-JAN-1996
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Billiar TR,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                AAR88464;
                                                                                                                                                                                                                                                                                                                                                                                                                                                          Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Query Match
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Best Loca
Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           AAR88464
   g
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               à
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               CDNA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAQ66914 is from human hepatocyte inducible nitric oxide synthase cDNA clone pHINOS from lambda Zap II cDNA library. The original source was induced human hepatocyte RNA. HINOS cDNA plasmid is pref. transformed in E. coli SOLK (ATCC 69126). The inventors claim a clone with the CDNA sequence in AAQ66914 and a cDNA clone which encodes AAR55764. The cloning and expression of a human tissue nitric oxide synthase CDNA provides a source of the enzyme for therapeutic purposes, for example to prevent the hypotensive shock seen with
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Gaps
                            Sequence encoded by the cDNA clone for human hepatocyte inducible nitric oxide synthase.
                                                                                                                                                                                                                                                                                                                                                                                                                                   encoding human inducible nitric oxide synthase - used the hypotensive shock seen with sepsis.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               interleukin-1-beta; pBSHSINOS; arthritis; hypertension;
septic shock; inflammation; ischemia; dementia; obesity; tumor;
agonist; antagonist; vector; CHO; Chinese hamster ovary;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
                                                                                    Nitric oxide synthase; hepatocyte; hypotensive shock; therapy
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 86; DB 15; Length 1153;
Pred. No. 0.0001;
Mismatches 1; Indels (
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Nitric-oxide-synthase; NO-synthase; NOS; chondrocyte;
                                                                                                                                                                                                                                                                                                                                              Simmons RL;
                                                                                                                                                                                                                                                                                                                                              Nussler AK,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAR63206 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Disclosure; Fig 1; 53pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   ö
```

94.5%;

1153 AA;

Sequence

sepsis.

1 NNNVEKAPSATSSPVTQD 18 nnnvekapcatsspvtgd 42

ò g

25

17; Conservative

Best Local Similarity Matches 17; Conserv

Query Match

(first entry)

09-MAY-1995

AAR63206;

AAR63206

Nitric-oxide-synthase.

cell culture

WO9423038-A.

Homo

13-0CT-1994

ö

Gaps

ö

S

```
WO200103728-A2
                                                                                                                                                                                                30-APR-2001
                                                                                                                                                                                                                                                                                   Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                             09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                18-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                           Vogels R,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Seguence
                                                                                                                                                                         AAB31724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Query Match
                                                                                                                         10
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         RESULT 11
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Matches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAB66724
                                                                                                                         RESULT
                                                                                                                                    AAB317;
ID A
                                                                                    QQ
                                                                                                                                                                        g
                                                               õ
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               δ
                                                                                                                                     ó
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  This protein comprises human penis inducible nitric oxide synthetase (HPINOS). Its amino acid sequence was deduced from a confactor (see AAT98199) derived from human penile smooth muscle cell mRNA. The invention is directed to a method of treating erectile dysfunction in a patient by providing an agent capable of treating erectile dysfunction, and introducing an effective amount of the agent into the penile tissue of the patient. Preferably, the agent induces cavernosal smooth muscle relaxation, and/or produces an increase in the level of NOS in tissue. Preferably, the NOS is iNOS, and the agent is introduced into the corpora cavernosa of the penis. The agent is introduced into the corpora cavernosa of the penis. The agent is preferably an NOS inducer, an NOS protein such as HPINOS, a cDNA encoding an NOS such as HPINOS, or cDNA transformed penile cells, especially corpora cavernosa
                                                                                                                                       Gaps
of a cDNA clone (AAT10115) derived from human hepatocytes induced for iNOS biosynthesis. The iNOS can be obtd. by expression of the cDNA e.g. in mammalian host cells and is used in the development of selective inhibitors of NOS or to treat diseases affected by nitric oxide.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Treatment of erectile dysfunction - by introducing an agent into penile tissue, particularly for inducing cavernosal smooth muscle relaxation or increasing NOS levels
                                                                                                                                                                                                                                                                                                                                             Nitric oxide synthetase; NOS; iNOS; HPINOS; human; erectile dysfunction; impotence; gene therapy; corpora cavernosa;
                                                                                                                                   ;
                                                                                                           Score 86; DB 17; Length 1153;
Pred. No. 0.0001;
); Mismatches 1; Indels (
                                                                                                                                    0; Mismatches
                                                                                                                                                                                                                                                                                                                     Human inducible nitric oxide synthetase
                                                                                                                                                                                                                                              AAW36113 standard; Protein; 1153 AA
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Claim 12; Page 38-41; 53pp; English
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Rajfer J;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (GONZ/) GONZALEZ-CADAVID N F
                                                                                                            94.5%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         96US-0017373.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   97WO-US07643.
                                                                                                                                                           1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                         11-MAY-1998 (first entry)
                                                                                                           Query Match 94.5
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Gonzalez-Cadavid NF,
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 1998-008577/01
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         1153 AA;
                                                                         1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             RAJFER J.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         N-PSDB; AAT98199
                                                                                                                                                                                                                                                                                                                                                                                             Homo sapiens.
                                                                                                                                                                                                                                                                                                                                                                                                                   W09742965-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                   09-MAY-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         10-MAY-1996;
                                                                                                                                                                                                                                                                                                                                                                                                                                           20-NOV-1997.
                                                                          Sequence
                                                                                                                                                                                                                                                                      AAW36113;
                                                                                                                                                                                                                                                                                                                                                                     relaxant.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Seguence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              (RAJE/)
                                                                                                                                                                                                                      σ
                                                                                                                                                                                                                                AAW36113
                                                                                                                                                                                  q
                                                                                                                                                                                                                                                           88888888
                                                                                                                                                            ò
```

```
ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, used for isolated tissue perfusion treatment to enhance
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                The specification describes a method for gene therapy for enhancing and inducing angiogenesis. The method uses a nucleic acid delivery vehicle, which comprises a nucleic acid encoding nitric oxide synthase (NOS). The delivery vehicle is used for the manufacture of a pharmaceutical composition for isolated tissue perfusion treatment. The method is useful for enhancing and/or inducing angiogenesis in patients with endothelial dysfunctions, in particular arteriosclerosis. The present sequence represents an inducible NOS.
                                                  Gaps
                                                                                                                                                                                                                                                                                                                                                                                            Amino acid sequence of a human inducible nitric oxide synthase (NOS)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                         Gene therapy, angiogenesis; nucleic acid delivery, arteriosclerosis; nitric oxide synthase; NOS; endothelial dysfunction.
                                               ;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             DB 22; Length 1153;
  Length 1153;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Pred. No. 0.0001;
); Mismatches 1; Indels
                                               1; Indels
DB 19;
  Score 86; DB 19;
Pred. No. 0.0001;
                                               0; Mismatches
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Score 86;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 AAB66724 standard; protein; 1153 AA.
                                                                                                                                                                                                                                                        AAB31724 standard; Protein; 1153 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    Disclosure; Fig 6; 37pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        ;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           94.5%;
94.4%;
  94.5%;
94.4%;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                99EP-0202263.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       07-JUL-2000; 2000WO-NL00482.
                                                                                             1 NNNVEKAPSATSSPVTQD 18
                                                                                                                       1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                      (first entry)
  Query Match 94.5
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Local Similarity 94.4 ses 17; Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      and induce anglogenesis
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (INTR-) INTROGENE BV.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           WPI; 2001-123142/13.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        1153 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              AAB66724;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   SKKE
```

9

```
1 nnnvekapsatsspv
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              WPI; 1998-594495/50.
                                                              WPI; 1998-594495/50
                                                                                                                                                                                                                                                                                     Local Similarity
                                                                                                                                                                                                                                                  15 AA;
                            (WEBB/) WEBBER R.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         α.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          (WEBB/) WEBBER
          07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     15-0CT-1998
                                                                                                                                                                                                                                                                                               15;
                                                                                                                                                                                                                                 invention
                                                                                                                                                                                                                                                                                                                                                                                                AAW81284;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            ä
                                                                                                                                                                                                                                                   Seguence
                                                                                                                                                                                                                                                                              Query Match
                                              Webber
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Webber
                                                                                                                                                                                                                                                                                              Matches
                                                                                                                                                                                                                                                                                                                                                                     AAW81284
 õ
                                                                                                                                                                                                                                                                                                                                 q
                                                                                                                                                                                                                                                                                                                                                                                       ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multipbe sclerosis.
                                                                                                                                                                                                    Use of a nucleic acid delivery vehicle comprising a nucleic acid encoding nitric oxide synthase, especially useful in gene therapy for enhancing and/or inducing angiogenesis and treating atherosclerosis \cdot
                                                                                                                                                                                                                                                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                vehicle comprising a nucleic acid encoding nitric oxide synthase (NOS) activity for the manufacture of a composition for essentially isolated tissue perfusion treatment to enhance and/or induce anglogenesis. The nucleic acid delivery vehicle is particularly useful in gene therapy for the treatment of atherosclerosis.
                                                                                                                                                                                                                                                          present invention relates to use of a nucleic acid delivery
                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                   Score 86; DB 22; Length 1153; Pred. No. 0.0001;
                                                                                                                                                                                                                                                                                                                                                                     1; Indels
                                    Nitric oxide synthase; NOS; anglogenesis; gene therapy.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          /note- "Val residue amidated"
                                                                                                                                                                                                                                                                                                                                                                     Mismatches
                   Human inducible nitric oxide synthase.
                                                                                                                                                                                                                                        Examples; Page 14-18; 39pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human 1NOS peptide fragment PS-5247.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Location/Qualifiers
                                                                                                                                                                                                                                                                                                                                                                                                                                                      AA.
                                                                                                                                                                                                                                                                                                                                                                     ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                  AAW81218 standard; peptide; 15
                                                                                                           99EP-0202263
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                97WO-US06500
                                                                                                                            99EP-0202263
                                                                                                                                                                                                                                                                                                                                                                                      1 NNNVEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                25 nnnvekapcatsspvtgd 42
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        (first entry)
09-APR-2001 (first entry)
                                                                                                                                                                                                                                                                                                                                                 Query Match 94.5
Best Local Similarity 94.4
Matches 17; Conservative
                                                                                                                                                                 ŝ
                                                                                                                                              (INTR-) INTROGENE BV.
                                                                                                                                                                 Verlinden
                                                                                                                                                                                  WPI; 2001-125729/14.
                                                                                                                                                                                                                                                                                                                         Ä
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Modified-site
                                                      Homo saptens
                                                                       EP1067190-A1
                                                                                                          09-JUL-1999;
                                                                                                                            09-JUL-1999;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WO9845710-A1
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        30-APR-1999
                                                                                         10-JAN-2001
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              15-0CT-1998
                                                                                                                                                                 Vogels R,
                                                                                                                                                                                                                                                                                                                         Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                      AAW81218;
                                                                                                                                                                                                                                                          The
                                                                                                                                                                                                                                                                                                                                                                                                                                            AAW81218
ð
                                                                                                                                                                                                                                                                                                                                                                                                       g
```

```
specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (1NOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autofimmune disease; multiple sclerosis; epitope mapping.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          This invention describes an immunoassay method where a sample with a
                                                                                                                                                                                                                                                                                                                 Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            .;
0
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Length 15;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human iNOS peptide fragment for epitope mapping #5.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            82.4%; Score 75; DB 19; I
100.0%; Pred. No. 3.3e-05;
ive 0; Mismatches 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW81284 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Example 4; Page 35; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    82.
100.08; Fr.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              97US-6667777.
97US-6667777
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             30-APR-1999 (first entry)
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Conservative
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             1 NNNVEKAPSATSSPV 15
```

ö

ö

```
represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                        Homo sapiens
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         W09845710-A1
                                                                                                                                                                                                                                                                                            30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    15-0CT-1998
                invention.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Webber R;
                                          Sequence
                                                                                                                                                                                                                                                                AAW81214;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                Sequence
                                                                                                                                                                                                          RESULT 1
                                                                                                                                                                qq
                                                                                                                                                                                                                                                                SS \times S
                                                                                                                                         ŏ
                                                                                                                                                                                                                                                                               ö
                                       This invention describes an immunoassay method where a sample with a specific binding entiry (e.g. a monoclonal antibody) reactive to human inductible nitric oxide synthase (iNOS) or mindcs of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in calls and tissues for various pathophysiclogical conditions such as sepsis, septic shock myocardial infarction, rejection of tissue in organs following such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or minics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; milic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis; epitope mapping.
                                                                                                                                                                                                                                                                               Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human iNOS or mimics.
                                                                                                                                                                                                                                                                               ö
                                                                                                                                                                                                                                                  Length 15;
                                                                                                                                                                                                                                                                            0; Indels
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Human INOS peptide fragment for epitope mapping #1.
                                                                                                                                                                                                                                                  DB 19; L
3.3e-05;
                                                                                                                                                                                                                                                82.4%; Score 75; DB 100.0%; Pred. No. 3.3
                                                                                                                                                                                                                                                                                                                                                                                                        AAW81280 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             Example 4; Fig 7A; 93pp; English.
              4; Fig 7A; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            97WO-US06500
                                                                                                                                                                                                                                                                                                                                                                                                                                                                 (first entry)
                                                                                                                                                                                                                                                  Query Match 82.4
Best Local Similarity 100.
Matches 15; Conservative
                                                                                                                                                                                                                                                                                                                        1 NNNVEKAPSATSSPV 15
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        WPI; 1998-594495/50.
                                                                                                                                                                                                          15 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     WO9845710-A1.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      07-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           11-APR-1997;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                30-APR-1999
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               15-0CT-1998
                                                                                                                                                                                  Invention
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              Webber R;
                                                                                                                                                                                                            Sequence
                                                                                                                                                                                                                                                                                                                                                                                                                                    AAW81280;
                                                                                                                                                                                                                                                                                                                                                                               14
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Homo
```

g

ò

```
This invention describes an immunoassay method where a sample with a specific binding entity (e.g. a monoclonal antibody) reactive to human inducible nitric oxide synthase (iNOS) or mimics of this protein is used to detect the presence of human iNOS protein in the sample. The method can be used for the detection and quantitation of human iNOS in cells and tissues for various pathophysiological conditions such as sepsis, septic shock, myocardial infarction, rejection of tissue in organs following transplantation, monitoring "flare ups" in certain autoimmune diseases such as lupus, psoriasis, and multiple sclerosis. This sequence represents a peptide from human iNOS which is used in the method of the
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   Inducible; nitric oxide synthase; iNOS; human; immunoassay; detection; monoclonal antibody; mimic; quantitation; sepsis; septic shock; lupus; myocardial infarction; tissue rejection; transplantation; psoriasis; autoimmune disease; multiple sclerosis.
                                                                                                                                      Gaps
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            Detection of human inducible nitric oxide synthase - using an immunoassay in which a sample is contacted with a specific binding entity reactive with human INOS or mimics.
                                                                                                                                      ö
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          Length 15;
                                                                                     Length 15;
                                                                               DB 19; L
6.6e-05;
thes 0;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    DB 19; I
6.6e-05;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             /note= "Asp residue amidated"
                                                                                             100.0%; Prea. ....
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       80.2%; Score 73;
100.0%; Pred. No.
                                                                                  Score 73;
Pred. No.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Human iNOS peptide fragment PS-5243.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      Location/Qualifiers
15
                                                                                                                                                                                                                                                                                                                                                                                             AAW81214 standard; peptide; 15 AA.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Example 4; Page 34; 93pp; English.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 97WO-US06500.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            (first entry)
                                                                                  Query Match
Best Local Similarity 100.
Matches 15; Conservative
                                                                                                                                                                                                                            4 VEKAPSATSSPVTQD 18
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             WPI; 1998-594495/50.
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       Query Match
Best Local Similarity
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             ď
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     AA;
15 AA;
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                (WEBB/) WEBBER
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           Key
Modified-site
```

0; Indels 0; Mismatches Matches 15; Conservative

.; 0

0; Gaps

oy ob

Search completed: September 10, 2001, 14:00:25 Job time: 169 sec